

**HEAL UTAH \* NATIONAL PARKS CONSERVATION ASSOCIATION \*  
SIERRA CLUB**

March 14, 2016

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Via email to [Fallon.Gail@epa.gov](mailto:Fallon.Gail@epa.gov) and submitted to [www.regulations.gov](http://www.regulations.gov)<sup>1</sup>

**Re: Comments on EPA Proposed Rule on Utah Regional Haze State Implementation Plan  
Docket EPA-R08-OAR-2015-0463**

Dear Ms. Fallon:

On behalf of the HEAL Utah, National Parks Conservation Association, and Sierra Club (collectively referred to herein as the “Conservation Organizations”), we respectfully submit the following comments on EPA’s Proposed Rule on the Utah Regional Haze State Implementation Plan, Docket EPA-R08-OAR-2015-0463 (entitled “Approval, Disapproval, and Promulgation of Air Quality Implementation Plans; Partial Approval and Partial Disapproval of Air Quality Implementation Plans and Federal Implementation Plan; Utah; Revisions to Regional Haze State Implementation Plan; Federal Implementation Plan for Regional Haze”).

Our organizations represent tens of thousands of Utahns and people throughout the nation that care deeply about protecting the air quality in our national parks and wilderness areas in Utah and the Intermountain West. We strongly encourage EPA to adopt its proposed federal implementation plan to require significant reductions nitrogen oxide emissions from the four BART units at the Hunter and Huntington coal fired power plants to reduce visibility impairment as required by the Clean Air Act’s regional haze program.

Utah’s latest re-proposal of its regional haze state implementation plan (“SIP”) is the third attempt since 2008 to exempt Hunter Units 1 and 2 and Huntington Units 1 and 2 from appropriate pollution controls from the Clean Air Act-mandated BART requirements for nitrogen oxide emissions.<sup>2</sup> In lieu of significant future NO<sub>x</sub> emissions reductions that are

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<sup>1</sup> All documents referred to in this comment letter were filed under the appropriate docket number at [www.regulations.gov](http://www.regulations.gov). However, to avoid confusion, the March 14, 2016 Technical Support Document by Vicki Stamper, along with all attachments thereto, was filed separately. Likewise, the March 16, 2016 Expert Report by Dr. Andrew Gray, along with all attachments thereto, was also filed separately. Finally, the Conservation Organizations filed this comment letter separately, along with all exhibits hereto.

<sup>2</sup> 40 C.F.R. § 51.308(e).

readily achievable for these units, Utah proposes to rely entirely on historical emissions reductions, primarily due to the recent closure and dismantling of Units 1 and 2 of the Carbon Plant. As described below, Utah's SIP fails to meet the burden to prove that its BART Alternative achieves greater visibility improvement than would application of BART at the Hunter and Huntington plants. Even taking Utah's emissions assumptions and visibility modeling at face value, application of the consistently applied and widely accepted 98<sup>th</sup> percentile visibility metric shows that operation of selective catalytic reduction at the four BART units achieves greater visibility improvement than does Utah's proposed BART Alternative, and no other factor favors EPA's selection of Utah's BART Alternative over BART. Furthermore, Utah's emissions assumptions were deeply flawed. Most troublingly, Utah assumed unrealistically high future emissions from the Carbon Plant based on unfounded speculation that the Plant's future emissions would greatly exceed representative past emissions and that the Plant would not be required to comply with federal Mercury and Air Toxics Standards that compel significant SO<sub>2</sub> emissions reductions industry wide. When these errors are corrected, it is abundantly clear that compliance with BART would achieve far greater visibility benefits than Utah's proposed BART Alternative. As such, EPA is legally prohibited from approving the State SIP.

Moreover, BART compliance yields dramatic benefits. As discussed below and the attached technical support document of Victoria Stamper ("2016 Stamper TSD") and modeling report by Dr. Andrew Gray ("2016 Gray Modeling Report"), the visibility benefits achievable through application of stringent BART controls are some of the most significant improvements identified across the entire regional haze program, are critical to improving visibility at Southwestern Class I areas, and they are extremely cost effective. Accordingly, BART-based NO<sub>x</sub> emissions reductions from Hunter Units 1 and 2 and Huntington Units 1 and 2 are justified to clean the air over Utah's spectacular national parks and are legally required. The Conservation Organizations therefore urge EPA to promulgate its proposed federal implementation plan ("FIP") for Utah.<sup>3</sup>

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<sup>3</sup> A coalition of conservation groups submitted comment letters to the State of Utah on March 8, 2011, December 22, 2014, May 1, 2015, and September 14, 2015 regarding its adoption of the State Implementation Plan (SIP), which are attached and incorporated herein by reference. Copies of these comment letters are attached hereto as Exhibits ("Ex.") 1-4 and are incorporated herein by reference. A coalition of conservation groups also submitted a comment letter to U.S. Environmental Protection Agency on July 16, 2012, which is also attached and incorporated herein by reference. A copy of this letter is attached hereto as Exhibit 5. In addition, the National Park Service (NPS) previously submitted a series of comment letters to Utah on its regional haze SIP, which are attached hereto and incorporated herein by reference. *See* National Park Service ("NPS") letter to the State of Utah dated August 1, 2008 attached hereto as Ex. 6; NPS letter to the State of Utah dated March 4, 2011 attached hereto as Ex. 7; and, NPS letter to EPA dated July 13, 2012 attached hereto as Ex. 8. We also incorporate herein by reference the NPS comments to EPA on this proposed rule and all attachments thereto.

## I. FACTUAL BACKGROUND

### A. Utah Class I Areas

Regional haze results from small particles in the atmosphere that impairs a viewer's ability to see long distances, color, and geologic formations. While some haze-causing particles result from natural processes, most result from anthropogenic sources of pollution. Haze-forming pollutants, including sulfur dioxide (SO<sub>2</sub>), nitrogen oxides (NO<sub>x</sub>), particulate matter (PM), volatile organic compounds (VOCs) and ammonia (NH<sub>3</sub>), contribute directly to haze or form haze after breaking down in the atmosphere. These air pollutants contribute to the deterioration of air quality and reduced visibility in our national parks and wilderness areas. Visibility impairment is measured in deciviews, which is a measure of the perceptible change in visibility. The higher a deciview value, the worse the visibility impairment.

Recognizing the impact of air pollution on visibility, Congress declared as the nation's goal, the "prevention of any future, and the remedying of any existing, impairment of visibility in the mandatory class I Federal areas which impairment results from manmade air pollution."<sup>4</sup> In order to meet this goal, states are required to design an implementation plan to reduce, and ultimately eliminate, haze from air pollution sources within its borders that may reasonably be anticipated to cause or contribute to visibility impairment for any protected area located within or beyond that state's boundaries. In creating and implementing the plan, states have an unparalleled opportunity to protect and restore regional air quality in some of its most treasured and valuable places by curbing visibility impairing emissions from some of its oldest and most polluting facilities. The Clean Air Act ("CAA") imposes a legal obligation on states and EPA to abate haze pollution and its adverse visibility effects in our Class I Areas—our national parks and wilderness areas.<sup>5</sup> The CAA requires that the air quality in Class I areas be returned to natural conditions and one mechanism for achieving this goal is the requirement for certain haze-causing sources to install the "best available retrofit technology" ("BART").<sup>6</sup>

Units 1 and 2 at PacifiCorp's Hunter and Huntington coal plants are subject to BART. Emissions from these coal units contribute significantly to visibility impairment in the region's Class I areas. More specifically, emissions from these units cause or contribute to visibility impairment in at least 9 Class I areas, including Capitol Reef National Park, Canyonlands National Park, Arches National Park, Bryce Canyon National Park, Zion National Park, Grand Canyon National Park, Black Canyon of the Gunnison Wilderness, Flat Tops Wilderness Area, and Mesa Verde National Park. Emissions from these units also likely impact visibility in other neighboring out-of-state Class I areas, such as the Weminuche Wilderness area in Colorado. These national parks and wilderness areas impacted by Utah's emissions are among the crown jewels of America's national park and public lands system. The region is endowed with unparalleled landforms, stunning geologic features, irreplaceable scenic vistas, and a rich diversity of ecosystems. In fact, many of these national parks were established to preserve their

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<sup>4</sup> 42 U.S.C. §7491(a)(1).

<sup>5</sup> *Id.* § 7491.

<sup>6</sup> *Id.* § 7491(a), (b)(2).

scenic value.<sup>7</sup> They also serve as living museums of our nation's history. Visitors from across the nation and globe are drawn to these lands and their tourist dollars benefit state and local economies. In many ways, protecting these lands equates to protecting and enhancing the health of Utah's people, lands, wildlife, and economy.

Tourism is critical to Utah's economy. In 2008, 20.4 million visitors traveled to Utah.<sup>8</sup> By 2012, this number had increased to 23.5 million visitors.<sup>9</sup> Taken together, outdoor recreation and tourism represent one of the largest and fastest growing sectors of Utah's economy, with tourism accounting for an estimated \$7.1 billion in traveler spending and 113,030 tourism-related jobs in 2008. By 2012, these numbers grew to \$7.4 billion in traveler spending and 129,088 tourism related jobs. This visitor spending generated \$631 million in state and local tax revenues in 2008 and \$960.6 million in 2012 revenue that helps pay for services and infrastructure Utah residents and visitors use and enjoy.<sup>10</sup> Recent articles in Sierra magazine and National Geographic highlight the importance of clean air to businesses dependent on Utah's national parks.<sup>11</sup>

In 2012, visitation at Utah's national parks was at an all-time high with nearly 7 million visits.<sup>12</sup> Visitation to Utah's national parks has increased 175 percent from 1980 through 2012.<sup>13</sup> Canyonlands (702 %) and Arches (269%) National Parks, the two parks most severely impaired by emissions from Utah's BART units, saw the fastest visitation growth over this time period.<sup>14</sup> Utah's five Class I areas, all of which are national parks, generate a significant portion of this tourism economy: in 2008, these areas were responsible for 5.7 million recreation visits, over \$400 million in spending, and nearly 9,000 jobs.<sup>15</sup> Parks attract businesses and individuals to the local area, resulting in economic growth in areas near parks that is an average of 1 percent per year greater than statewide rates over the past three decades.<sup>16</sup> National parks also generate more than four dollars in value to the public for every tax dollar invested.<sup>17</sup> The economies of nearby

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<sup>7</sup> 16 U.S.C. §271 (Canyonlands National Park enabling legislation).

<sup>8</sup> Utah Office of Tourism, Governor's Office of Economic Development.

<sup>9</sup> Utah Economic and Business Review, Volume 73, No. 4 (2014) attached hereto as Exhibit 9.

<sup>10</sup> *Id.* at p. 9.

<sup>11</sup> Exhibit 10 (Sierra magazine article) hereto.

<sup>12</sup> *Id.* at p. 8.

<sup>13</sup> *Id.* at p. 7.

<sup>14</sup> *Id.* at p. 8.

<sup>15</sup> National Park Visitor Spending and Payroll Impacts, 2008. Daniel J. Stynes, Michigan State University, October 2009. <http://web4.msue.msu.edu/mgm2/parks/MGM2System2008.pdf>.

<sup>16</sup> Hardner and Gullison, "The U.S. National Park System, An Economic Asset at Risk" (November 2006) [prepared for the National Parks Conservation Association]. [http://www.npca.org/park\\_assets/NPCA\\_Economic\\_Significance\\_Report.pdf](http://www.npca.org/park_assets/NPCA_Economic_Significance_Report.pdf)

<sup>17</sup> *Id.*

communities and “gateway” towns, including places like Springdale, Panguitch, Escalante, Loa, Torrey, Moab and Hanksville depend heavily on visitation to these Class I areas.

Moreover, the people who visit and live in Utah are drawn to its natural wonders, including its Class I areas, in large part because of the outstanding vistas and incredible landscapes the state offers. Yet, the tourist industry and the aesthetics of Utah’s premiere destinations are threatened by visibility impairment. The visual range in western national parks has decreased from 140 miles to 35-90 miles.<sup>18</sup> Studies have shown that visitors value clean air in our national parks, are able to tell when it is hazy, and enjoy their visit less when haze is bad. Moreover, visitors are willing to alter their length of stay based on their perception of air quality.<sup>19</sup> Shorter park visits, or none at all, means less time and money spent in gateway communities.

Finally, investment in BART pollution control technologies is a job-creating mechanism in itself. Each installation creates short-term construction jobs as well as permanent operations and management positions.<sup>20</sup>

## **B. Air Quality and Sources of Haze Pollution in Utah**

In rigorously addressing visibility and, more specifically, haze-causing pollutants, Utah stands to reap significant benefits. Haze-causing pollutants have far-reaching impacts on human health, and the well-being of waterways, soils, plants, and wildlife—in other words, entire ecosystems. Decreasing these pollutants will likely benefit all of these important areas of concern; failing to do so will likely cause or continue to cause adverse impacts.

### **1. Human Health Impacts**

The same pollutants that contribute to visibility impairment also harm public health. The fine particulates that cause regional haze, PM<sub>2.5</sub>, are a major public health concern because they can be inhaled deep into the lungs. Fine particulate can cause decreased lung function, aggravate asthma, and lead to premature death in people with heart or lung disease. NO<sub>x</sub> and VOCs are also precursors to ground level ozone, or smog. Ground level ozone is associated with respiratory disease, asthma attacks, and decreased lung function.<sup>21</sup> Ozone concentrations in

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<sup>18</sup> [www.epa.gov/airquality/visibility/what.html](http://www.epa.gov/airquality/visibility/what.html) (last visited December 18, 2014).

<sup>19</sup> Out of Sight: The Science and Economics of Visibility Impairment. Abt Associates, August 2000.

<sup>20</sup> For a recent example, see NEW JOBS - CLEANER AIR: Employment Effects Under Planned Changes to the EPA’s Air Pollution Rules. Ceres and James Heintz, Political Economy Research Institute, University of Massachusetts. February 2011.

<sup>21</sup> See <http://www.nature.nps.gov/stats/index.cfm>.

parks in Utah and the Four Corners region approach the current health standards,<sup>22</sup> and will likely violate the new lower standards.<sup>23</sup> In fact, ozone levels in many parts of Utah, Arizona, and Colorado are already in the range of ozone levels deemed to be harmful to human health.<sup>24,25</sup>

The benefits to be realized through reduction of these widely damaging pollutants are substantial, particularly when compared to the costs. The total annual nationwide cost of implementing the Regional Haze Rule will range from 1.4 – 1.5 billion dollars.<sup>26</sup> However, based on the attendant reductions in air pollution, EPA determined that in 2015, the Regional Haze Rule will provide nationwide health benefits valued at \$8.4 – \$9.8 billion annually—preventing 1,600 premature deaths, 2,200 non-fatal heart attacks, 960 hospital admissions, and

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<sup>22</sup> Monitors in Utah and the Four Corners region have registered ozone concentrations considered to be a violation of the new ozone NAAQS. As of 2008, the fourth highest ozone concentrations in Zion and Canyonlands national parks each year have averaged 72 ppb and 71 ppb respectively. Mesa Verde National Park and Petrified Forest National Monument each had 3-year averages of the fourth high ozone concentrations of 71 ppb as of 2008. Monitors in Grand Canyon National Park and Farmington, New Mexico had a 3-year average of the fourth highest ozone concentration equal to 70 ppb as of 2008. All monitor values and averages obtained from either UDAQ or EPA's AirData website.

<sup>23</sup> On October 26, 2015, EPA published a final rule strengthening the National Ambient Air Quality Standards (NAAQS) for ground-level ozone to 70 ppb based on extensive scientific evidence about ozone's harmful health impacts. *See* Final Rule, National Ambient Air Quality Standards for Ozone, 80 Fed. Reg. 65,292 (Oct. 26, 2015). For a map of counties exceeding the 70 ppb ground level ozone standard, see: [http://ozoneairqualitystandards.epa.gov/OAR\\_OAQPS/OzoneSliderApp/index.html#](http://ozoneairqualitystandards.epa.gov/OAR_OAQPS/OzoneSliderApp/index.html#).

<sup>24</sup> See Clean Air Scientific Advisory Committee correspondence with EPA Administrator Stephen Johnson (Oct. 24, 2006) ("Clean Air Scientific Advisory Committee's (CASAC) Peer Review of the Agency's 2<sup>nd</sup> Draft Ozone Staff Paper"). CASAC found that elevated ozone concentrations are associated with "an increase in school absenteeism; increases in respiratory hospital emergency department visits among asthmatics and patients with other respiratory diseases; an increase in hospitalizations for respiratory illnesses; an increase in symptoms associated with adverse health effects, including chest tightness and medication usage; and an increase in mortality (non-accidental, cardiorespiratory deaths) reported at exposure levels well below the current standard."

<sup>25</sup> A recent study in the New England Journal of Medicine provides confirmation that that long-term exposure to ozone increases the risk of death from respiratory causes. Jerrett, Michael et al., "Long Term Ozone Exposure and Mortality," NE J Medicine 2009; 360, 1085-1095. In a long-term study of nearly 500,000 participants, the study found a 4% increase in death for respiratory causes for every 10-ppb increase in exposure to ozone. The risk of dying from respiratory causes in the highest-ozone areas was nearly three times that in the lowest-exposure areas.

<sup>26</sup> EPA, Fact Sheet, *Final Regional Haze Regulations for Protection of Visibility in National Parks and Wilderness Areas* (June 2, 1999) at [http://www.epa.gov/visibility/fs\\_2005\\_6\\_15.html](http://www.epa.gov/visibility/fs_2005_6_15.html).

over 1 million lost school and work days every year.<sup>27</sup> These benefits are estimated under the assumption that the Regional Haze Rule will be implemented as intended. Unfortunately, the corresponding public health benefits will not be realized for the citizens of Utah and downwind states if EPA does not require state-of-the-industry BART controls at the Hunter and Huntington plants.

a. PM

Medical research in the last ten years clearly indicates that there is no “safe level” of exposure to PM<sub>2.5</sub>. Even levels which we previously thought to be benign we now know are not. There is no threshold below which health effects do not occur, and all persons are adversely affected, regardless of age and/or overall state of health.

Most Utahns are exposed to high levels of ozone in the summer, PM<sub>2.5</sub> in the winter, and PM<sub>10</sub> and SO<sub>2</sub> year-round, meaning that a large percentage of Utah’s population is exposed repeatedly to unhealthy levels of pollution throughout the year.

b. Ozone

Although ozone and NO<sub>x</sub> have been less a research focus than particulate matter, they are still well established to have broad based adverse health consequences. NO<sub>x</sub> is a precursor of ozone pollution. Regarding ozone, most research has been done on ozone’s effect on the pulmonary system.

Short term ozone inhalation results in a loss of maximal inspiration, increase in airway resistance, and causes a broad array of respiratory symptoms consistent with airway inflammation and damage—coughing, throat irritation, chest pain, shortness of breath and wheezing.<sup>28</sup> Limitations of pre-existing lung diseases like asthma, emphysema, and chronic bronchitis are exacerbated by ozone. To quote EPA, “Limited exposure-response modeling suggests that if a population threshold for these ozone effects exists [mortality], it is likely near the lower limit of ambient ozone concentrations in the United States.”<sup>29</sup> This mirrors the more well established linear, “no threshold effect” now well documented for mortality and particulate matter.

Long term exposure to ozone is also associated with all-cause mortality with some studies indicating there is no threshold below which that relationship is no longer found.<sup>30</sup> An extensive examination of the health effects of ozone is attached hereto as Exhibit 8.

<sup>27</sup> See <http://yosemite.epa.gov/opa/admpress.nsf/a4a961970f783d3a85257359003d480d/a7f12fefcb64426885257022004fbd26!OpenDocument>.

<sup>28</sup> <http://www.epa.gov/apti/ozonehealth/population.html>

<sup>29</sup> <http://www.epa.gov/apti/ozonehealth/population.html>

<sup>30</sup> Atkinson RW, Yu D, Armstrong BG, Pattenden S, Wilkinson P, Doherty RM, et al. 2012. Concentration-Response Function for Ozone and Daily Mortality: Results from Five Urban and Five Rural UK Populations. *Environ Health Perspect.* <http://dx.doi.org/10.1289/ehp.1104108>

## 2. Ecosystem Impacts

The same haze-causing emissions harm terrestrial and aquatic plants and animals, soil health, and moving and stationary waterbodies—entire ecosystems—by contributing to acid rain, ozone formation, and nitrogen deposition. Nitrogen deposition, caused by wet and dry deposition of nitrates derived from NO<sub>x</sub> emissions, causes well known adverse impacts on ecological systems. Scientific investigations have already demonstrated that nitrogen is saturating the soil, plants and water of Rocky Mountain National Park at levels at least twice the “critical load” the ecosystem can tolerate. According to EPA,

Acid rain causes acidification of lakes and streams and contributes to the damage of trees at high elevations (for example, red spruce trees above 2,000 feet) and many sensitive forest soils. In addition, acid rain accelerates the decay of building materials and paints, including irreplaceable buildings, statues, and sculptures that are part of our nation's cultural heritage.<sup>31</sup>

Further, ground level ozone formation impacts plants and ecosystems by:

- interfering with the ability of sensitive plants to produce and store food, making them more susceptible to certain diseases, insects, other pollutants, competition and harsh weather;
- damaging the leaves of trees and other plants, negatively impacting the appearance of urban vegetation, as well as vegetation in national parks and recreation areas; and
- reducing forest growth and crop yields, potentially impacting species diversity in ecosystems.<sup>32</sup>

All of these economic, human health and ecosystem impacts are caused or exacerbated by the continued emissions of visibility-reducing pollutants such as NO<sub>x</sub>; likewise, reductions in haze pollution lessen these impacts to our citizens, public lands, and economies.

The regional haze program imposes a legal obligation on the states to abate the adverse visibility effects to which its haze causing facilities contribute in order to restore visibility levels to their natural conditions as mandated by the Clean Air Act. To prevent and remedy visibility impairment to the implicated Class I areas in and around Utah, EPA must adopt its Federal Implementation Plan reducing NO<sub>x</sub> emissions from the Utah BART sources. A strong regional haze program will not only help protect and restore treasured landscapes and safeguard the economies that rely on them but also benefit public health.

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<sup>31</sup> <http://www.epa.gov/acidrain/effects/index.html>

<sup>32</sup> <http://www.epa.gov/glo/health.html>



## II. PROCEDURAL BACKGROUND

Utah has an unfortunate history of delaying implementation of the regional haze program. In fact, Utah is one of the last states in the nation to seek approval from EPA of its regional haze SIP. Submission of approvable initial regional haze plans was supposed to occur in 2007, with the first planning period ending ten years later in 2018. Throughout this time period, Utah has refused to require proper BART controls at Hunter Units 1 and 2 and Huntington Units 1 and 2 despite the clear mandate of the Clean Air Act to reduce or eliminate visibility impairment caused by BART sources.<sup>33</sup> The only thing that has changed over time is Utah's post-hoc justification for refusing to impose BART controls.

Utah first proposed to exempt the Hunter and Huntington units from pollution control requirements under BART in 2008. The state's proposal was met with broad criticism from federal regulators, federal land managers and conservation organizations. The state then formally submitted its defective Regional Haze SIP in 2011. Utah argued that the presumptive NO<sub>x</sub> emissions limits were applicable to these units and that the state did not need to conduct a 5-factor BART analysis as required by the regional haze regulations. A coalition of conservation groups submitted a comment letter to the state on March 8, 2011 opposing Utah's proposed BART determinations, a copy of which is attached and incorporated herein by reference.<sup>34</sup> The Conservation Organizations also submitted a comment letter to EPA on July 16, 2012, which is also attached and incorporated herein by reference.<sup>35</sup>

In December of 2012, EPA disapproved Utah's BART emission limits for NO<sub>x</sub> and PM at Hunter Units 1 and 2 and Huntington Units 1 and 2 because the state did not perform a proper five-factor BART analysis for these pollutants. EPA also disapproved the BART emission limits as practically unenforceable.<sup>36</sup> Utah's delayed and defective SIP resulted in additional significant delays in implementation of the regional haze program. EPA's disapproval triggered a two-year deadline for the State to submit an acceptable regional haze SIP or else EPA would be forced to issue its own FIP.<sup>37</sup> Instead of immediately addressing EPA's concerns, Utah and PacifiCorp sued EPA challenging its disapproval of the Utah BART determinations. Utah and PacifiCorp's lawsuit was dismissed by the Tenth Circuit Court of Appeals.<sup>38</sup>

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<sup>33</sup> 42 U.S.C. § 7491(b)(2)(A).

<sup>34</sup> A copy of this letter is attached hereto as Exhibit 1 and is incorporated herein by reference.

<sup>35</sup> A copy of this letter is attached hereto as Exhibit 5.

<sup>36</sup> Final Rule, Utah Regional Haze, 77 Fed. Reg. 74,355, 74,357 (Dec. 14, 2012). EPA's action approved Utah's 309 plan addressing SO<sub>2</sub> emissions under the Western Backstop Trading Program.

<sup>37</sup> 42 U.S.C. § 7410(c).

<sup>38</sup> *See Utah ex rel. Utah Dep't of Env'tl. Quality v. U.S. EPA*, 750 F.3d 1182, 1184 (10th Cir.) rehearing denied sub nom. *Utah v. U.S. Env'tl. Prot. Agency*, 765 F.3d 1257 (10th Cir. 2014).

In July 2012, PacifiCorp submitted revised BART analyses for the Hunter and Huntington BART units.<sup>39</sup> In August of 2014, PacifiCorp submitted a BART analysis update for all four units.<sup>40</sup> In the 2014 update, PacifiCorp submitted updates to its 2012 cost analysis for selective catalytic reduction (SCR).

Delaying for nearly two years, on October 1, 2014 Utah formally announced its proposal to the Utah Air Quality Board to retain its 2008 NO<sub>x</sub> BART emission limits for the BART-subject units at Hunter and Huntington Power Plants. Utah also proposed to adopt lower PM limits for BART at these units (based on new, lower permit limits), and to adopt measures to make these requirements enforceable. Utah relied on PacifiCorp's 5-factor BART analyses in making this determination. Utah also indicated that it would conduct its own visibility modeling analysis, which had yet to be commenced.

Utah initially proposed a hearing before the Utah Air Quality Board in January 2015 for consideration of its BART determinations. Utah delayed that hearing until February 2015.<sup>41</sup> Thus, Utah failed to even seek adoption of its SIP, let alone submit it to EPA, within the 2-year statutory deadline.

Utah also failed to comply with regulatory requirements for public comment. Utah initially promised that the public would receive at least a 60-day comment period.<sup>42</sup> The Conservation Organizations began communicating with Utah's Division of Air Quality (UDAQ) in August 2014 to attempt to obtain visibility modeling files on which Utah intended to rely for its regional haze SIP. At that time, Utah indicated its intent to perform independent visibility modeling to support its regional haze SIP and agreed to provide to the Conservation Organizations the modeling files Utah had received from PacifiCorp. When we received such files from Utah in September 2014, output files with CALPUFF modeling results for all affected Class I areas were omitted. After repeated attempts to obtain such output files, Utah finally indicated that it never received them from PacifiCorp and, apparently, did not intend to request them. Thus, neither UDAQ nor the public were able to critique, verify, or replicate PacifiCorp's visibility modeling. When Utah formally released its draft proposed SIP on October 1, 2014 its BART determinations relied exclusively on PacifiCorp's modeling for a single Class I area.<sup>43</sup> At

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<sup>39</sup> These are identified as the June 2012 BART Analyses on UDAQ's Regional Haze website at <http://www.airquality.utah.gov/Planning/regionalhaze/index.htm>.

<sup>40</sup> This is identified as the August 2014 Utah Five Factor Analysis Update on UDAQ's Regional Haze website at <http://www.airquality.utah.gov/Planning/regionalhaze/index.htm>.

<sup>41</sup> See <http://www.airquality.utah.gov/Public-Interest/Public-Commen-Hearings/Pubrule.htm> (last visited Dec. 12, 2014),

<sup>42</sup> See Exhibit 11 hereto, p. 15 (UDAQ Regional Haze SIP PowerPoint Presentation dated June 6, 2012).

<sup>43</sup> As is the case in Utah, pollution plumes from BART sources often affect visibility at numerous Class I areas. Therefore, as will be discussed further in this comment letter, it is imperative that the cumulative visibility benefits of various air pollution controls be assessed rather than the benefits from a single Class I area.

that time, Utah indicated that the state still intended to perform modeling that would support these BART determinations already made.

Utah finalized and released the results of its independent modeling on November 25, 2014—nearly 2 months after Utah released the draft proposed SIP that the modeling purportedly supports. Utah’s technical support document, the main narrative rationale for its BART decisions, was not publicly available until November 28, 2014. Thus, these important documents were not available to the public at the beginning of the already abbreviated public comment period, which ended on December 22, 2014. In addition, UDAQ failed to promptly provide the modeling files and support for its BART determinations, which also deprived the National Park Service of the mandated 60-day review period. More troublesome still is that UDAQ’s analysis relied on modeling files it apparently did not have.

Utah’s 2015 regional haze SIP did not propose any future NO<sub>x</sub> emissions reductions from the BART sources at Hunter and Huntington. Instead, for the first time, Utah proposed a BART “alternative” whereby the state gave credit to PacifiCorp for emissions reductions from non-BART units that occurred months and years prior to its final adoption of the 2015 SIP. More specifically, Utah’s proposed regional haze SIP gave credit to PacifiCorp for SO<sub>2</sub>, NO<sub>x</sub>, and PM emissions reductions from the April 2015 closure of its two unit Carbon power plant. The Carbon units are geographically distinct from the Hunter and Huntington plants. PacifiCorp has publicly stated that it chose to close the Carbon plant to comply with EPA’s recently adopted Mercury and Air Toxics (MATS) regulations. Prior to the closure of the Carbon plant, PacifiCorp never publicly stated that closure of the Carbon plant was part of a BART Alternative plan to comply with regional haze requirements. Utah also gave credit for PacifiCorp’s voluntary installation of low-NO<sub>x</sub> burners at Hunter Unit 3 in 2008. In summary, Utah’s proposed SIP did not impose *any* future emissions reduction requirements at the Hunter and Huntington BART sources and instead sought to take credit for historic emissions reductions occurring largely at non-BART sources that were either voluntarily undertaken, or done so to comply with regulatory requirements other than regional haze.

Utah claimed that its BART Alternative achieved greater visibility improvement than would installation of SCR BART controls on Hunter and Huntington Units 1 and 2. Utah finally presented the results of its visibility modeling in attempt to support its claim.

A coalition of conservation organizations submitted comments on Utah’s 2015 proposed regional haze SIP proposal.<sup>44</sup> The conservation organizations conducted their own visibility modeling, which evaluated impacts to all Class I areas within 300 km of the BART sources. Using EPA’s universally applied metric, our visibility modeling clearly shows that installation of SCR on the BART units achieves much greater visibility improvement than does Utah’s BART Alternative. In fact, installation of SCR on the Utah BART units would achieve some of the most significant visibility improvements in the country. In addition, installation of these BART controls are very cost effective compared to costs identified in other EPA rulemakings imposing these emissions controls.

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<sup>44</sup> Exhibits 3 and 4 hereto.

NPS also submitted comments taking issue with Utah's BART Alternative finding it to be "unprecedented" and stating that the installation of SCR as BART for eligible Hunter and Huntington units should be required.<sup>45</sup>

Utah finally adopted its regional haze SIP in March 2015. After final adoption, EPA apparently echoed concerns raised by NPS and the conservation organizations that Utah's BART Alternative was inappropriately taking credit for SO<sub>2</sub> reductions from the Carbon plant in two regulatory programs—the SO<sub>2</sub> backstop trading program and in Utah's NO<sub>x</sub> BART program. This apparent push back from EPA caused Utah to again revise its 2015 regional haze SIP by proposing an Enforceable Commitment SIP in June 2015. The conservation organizations submitted comments on the Enforceable Commitment SIP in July 2015, again highlighting significant flaws with Utah's proposal. Utah adopted its Enforceable Commitment SIP in August 2015.

### III. LEGAL BACKGROUND

#### A. The Purpose and Requirements of the Regional Haze Program.

Congress enacted the regional haze provisions of the Clean Air Act to protect the "intrinsic beauty and historical and archaeological treasures" of our nation's most prized public lands—including National Parks such as Canyonlands and Arches and wilderness areas nationwide—by eliminating human-caused haze pollution that mars vistas in these "Class I areas."<sup>46</sup> In the western United States, human-caused haze has reduced the visual range in many Class I areas to only 100-150 kilometers—about one-half to two-thirds the range that otherwise would exist. *Id.* Haze pollution results from a multitude of sources that emit fine particulate matter and its precursors, which include SO<sub>2</sub><sup>47</sup> and NO<sub>x</sub>.<sup>48</sup>

To achieve Congress's national goal of "prevent[ing] any future, and remedying...any existing" human-caused haze in Class I areas,<sup>49</sup> the Act requires each state to develop an implementation plan to reduce, and ultimately eliminate, air pollution from sources within its borders that causes or contributes to visibility impairment in any Class I area.<sup>50</sup> These state implementation plans, or "SIPs," must prescribe "emission limits, schedules of compliance and other measures as may be necessary to make reasonable progress toward meeting the national

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<sup>45</sup> Letter from National Park Service to State of Utah (May 1, 2015), Exhibit 12 hereto.

<sup>46</sup> H.R. Rep. No. 95-294, at 203-04 (1977), *reprinted in* 1977 U.S.C.C.A.N. 1077, 1282; *see also* 42 U.S.C. § 7472(a) (defining Class I areas to encompass national parks and wilderness areas); *id.* § 7491(a)(1) (establishing a goal of eliminating human-caused haze). Haze pollution "reduces the clarity, color, and visible distance that one can see." Final Rule, Wyoming Regional Haze, 79 Fed. Reg. 5,032, 5,034 (Jan. 30, 2014).

<sup>47</sup> As noted above, this Regional Haze SIP is limited to NO<sub>x</sub> and PM BART.

<sup>48</sup> *Id.* at 5,033-34.

<sup>49</sup> 42 U.S.C. § 7491(a)(1),

<sup>50</sup> *Id.* § 7491(b).

goal.”<sup>51</sup> “EPA reviews all SIPs to ensure that the plans comply with the statute,” and it “may not approve any plan that ‘would interfere with any applicable requirement.’”<sup>52</sup> If a SIP does not satisfy statutory and regulatory requirements, EPA must disapprove it and prepare a federal implementation plan, or “FIP.”<sup>53</sup>

The CAA and EPA’s Regional Haze Rule, 40 C.F.R. § 51.308, prescribe three main elements that SIPs must contain to assure reasonable progress toward the national visibility goal. First, for each Class I area within a state, the state (or EPA in promulgating a FIP) must establish visibility-improvement goals “that provide for reasonable progress towards achieving natural visibility conditions.”<sup>54</sup> These “reasonable progress goals” must be expressed in deciviews and must at a minimum “provide for an improvement in visibility for the most impaired days over the period of the implementation plan and ensure no degradation in visibility for the least impaired days over the same period.” *Id.* Further, states setting reasonable progress goals must account for EPA’s target of restoring natural visibility conditions by 2064.<sup>55</sup> The state must determine the rate of progress necessary to restore natural visibility by 2064—called the “uniform rate of progress” or “glide path.”<sup>56</sup> Essentially, the reasonable progress goal is a reflection of all emissions-reduction measures necessary to the required progress.<sup>57</sup> A state may reject available emission-reduction measures and adopt reasonable progress goals that provide for a slower rate of progress only if the state (1) establishes that achieving the uniform rate would be unreasonable considering “the costs of compliance, the time necessary for compliance, the energy and non-air quality environmental impacts of compliance, and the remaining useful life of any potentially affected sources;” and (2) “provide[s] a demonstration...showing why a less ambitious goal is reasonable,” in light of the statutory mandate.<sup>58</sup> In addition, “[t]he State must provide to the public for review as part of its implementation plan an assessment of the number of years it would take to attain natural conditions if visibility improvement continues at the rate of progress selected by the State as reasonable.”<sup>59</sup>

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<sup>51</sup> *Id.* § 7491(b)(2).

<sup>52</sup> *Oklahoma v. EPA*, 723 F.3d 1201, 1204 (10th Cir. 2013) (quoting 42 U.S.C. § 7410(l)), *cert. denied*, 134 S. Ct. 2262 (May 27, 2014).

<sup>53</sup> 42 U.S.C. § 7410(c)(1)(A).

<sup>54</sup> 40 C.F.R. § 51.308(d)(1).

<sup>55</sup> *Id.* § 51.308(d)(1)(i)(B).

<sup>56</sup> *Id.*

<sup>57</sup> *Id.* § 51.308(d)(1)(i)(A); Final Rule, Regional Haze Regulations, 64 Fed. Reg. 35,714, 35,732 (July 1, 1999) (1999 Regional Haze Rule).

<sup>58</sup> 1999 Regional Haze Rule, 64 Fed. Reg. at 35,732; *see* 40 C.F.R. § 51.308(d)(1)(ii) (codifying demonstration requirement).

<sup>59</sup> 40 C.F.R. § 51.308(d)(1)(ii). EPA determined that Utah met these “reasonable progress” requirements through its submission of a SIP under 40 C.F.R. § 51.309. Final Rule, Utah, Regional Haze Rule Requirements for Mandatory Class I Areas Under 40 CFR 51.309, 77 Fed. Reg. 74,355, 74,367 (Dec. 14, 2012).

As the Ninth Circuit Court of Appeals recently reaffirmed, “Congress intended that EPA, not the states alone, ultimately ensure that state determinations as to regional haze comply with the Act, and so authorized EPA to disapprove state “analysis that is neither reasoned nor moored to the [Act’s] provisions.”<sup>60</sup>

# 1. Requirements of BART

In enacting the visibility protection provisions of the Clean Air Act, Congress explicitly mandated retrofits of some of the oldest and dirtiest stationary sources of haze pollution as necessary to ensure reasonable progress toward the national visibility goal.<sup>61</sup> SIPs must require installation of the “best available retrofit technology,” or “BART,” at major stationary sources of haze pollution that began operating between 1962 and 1977 and cause or contribute to visibility impairment in Class I areas.<sup>62</sup> “The determination of BART must be based on an analysis of the best system of continuous emission control technology available and associated emission reductions achievable” for each affected source, considering five factors:

the costs of compliance, the energy and nonair quality environmental impacts of compliance, any pollution control equipment in use at the source, the remaining useful life of the source, and the degree of improvement in visibility which may reasonably be anticipated to result from the use of such technology.<sup>63</sup>

For a power plant with a total generating capacity exceeding 750 megawatts—which describes both the Hunter and Huntington plants—the state must conduct this analysis according to EPA’s BART Guidelines, codified at 40 C.F.R. pt. 51, Appendix Y.<sup>64</sup> Congress created a single exemption to the BART requirement for BART-eligible facilities. Upon the concurrence of appropriate Federal land managers, EPA may exempt a BART-eligible source that does not “by itself or in combination with other sources, emit any air pollutant which may reasonably be anticipated to cause or contribute to a significant impairment of visibility in any mandatory class I Federal area.”<sup>65</sup> For all other sources meeting the statutory criteria of 42 U.S.C. § 7491(b)(2)(A), states must either impose source-specific BART emission limits or, as described

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<sup>60</sup> *Arizona v. EPA*, -- F. 3d --, Nos. 13–70366, 13–70410, 2016 WL 722685, \*9 (Feb. 24, 2016).

<sup>61</sup> 42 U.S.C. § 7491(b)(2), (b)(2)(A).

<sup>62</sup> *Id.* § 7491(b)(2); 40 C.F.R. pt. 51, App. Y. A “major stationary source” falls within one of twenty-six enumerated industrial categories and has the potential to emit at least 250 tons of air pollution annually. 42 U.S.C. § 7491(g)(7).

<sup>63</sup> 40 C.F.R. § 51.308(e)(1)(ii)(A).

<sup>64</sup> *Id.* § 51.308(e)(1)(ii)(B).

<sup>65</sup> 42 U.S.C. § 7491(c).

below, cover them under an alternative program that makes greater reasonable progress than would BART.<sup>66</sup>

Because of their age and scale, BART sources make an outsized contribution to the regional haze problem; the need to remedy haze-causing pollution from these sources was “a major concern motivating the adoption of the [CAA’s] visibility provisions.”<sup>67</sup> The statutory purpose of the BART program is “eliminating or reducing such [visibility] impairment...” from BART sources.<sup>68</sup> Thus, adequate emissions controls on sources subject to BART, including Hunter and Huntington, are an essential component of meeting the visibility goal of the Regional Haze Program.

## 2. “BART Alternative” Requirements

With EPA’s rejection of the state’s previous attempt to exempt its BART units from additional air pollution controls, Utah’s SIP for the first time formally proposes a “BART Alternative” that attempts to take credit for pre-existing emissions reductions largely at non-BART units (retirement of the two Carbon coal plant units and the 2008 installation of newer low NO<sub>x</sub> burners at Hunter Unit 3) in lieu of future controls on the four BART sources. ***Utah’s BART alternative does not propose any future emissions reductions from BART sources or any other source in the State of Utah.*** Instead, Utah proposes emissions reductions that occurred as long ago as 2008, and those reductions achieved visibility benefits inferior to those that would be achieved with proper BART implementation.

EPA’s regional haze regulations contain a provision allowing for—in narrow circumstances—an “emissions trading program or other alternative” to satisfy BART for the facilities covered by the alternative program.<sup>69</sup> Because the BART requirement effectively establishes a statutory floor for permissible pollution levels under the visibility program, a BART alternative program is lawful only “so long as the alternative w[ill] achieve ‘better than BART’ results,”<sup>70</sup> *i.e.*, only if the alternative program will yield lower emissions of haze-forming pollutants or greater visibility improvements than would occur with installation of source-specific BART.<sup>71</sup>

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<sup>66</sup> 40 C.F.R. § 51.308(e)(2)(i)(B) (“[E]ach BART-eligible source in the State must be subject to the requirements of the alternative program [or] have a federally enforceable emission limitation determined by the State and approved by EPA as meeting BART.”).

<sup>67</sup> 1999 Regional Haze Rule, 64 Fed. Reg. at 35,737 (quoting H.R. Rep. No. 564, 95th Cong., 1st Sess. at 155 (1977)).

<sup>68</sup> 42 U.S.C. § 7491(b)(2)(A).

<sup>69</sup> 40 C.F.R. § 51.308(e).

<sup>70</sup> *Ctr. for Energy & Econ. Dev. v. Env’tl. Prot. Agency*, 398 F.3d 653, 655 (D.C. Cir. 2005) (citations omitted) (“CEED”).

<sup>71</sup> See Final Rule, Regional Haze Regulations; Revisions to Provisions Governing Alternative to Source-Specific Best Available Retrofit Technology (BART) Determinations, 71 Fed. Reg. 60,612, 60,618 (Oct. 13, 2006).

Significantly, a BART alternative must comply with Congress's direction to reduce haze-causing emissions from the sources that are subject to BART. In developing regulations governing development of alternative programs, EPA acknowledged that the Regional Haze Program's "legislative history demonstrates Congress' recognition of the need to control emissions from a specific set of existing sources."<sup>72</sup> Thus, in EPA's words, "[a]llowing States to adopt alternative measures such as an emissions trading program rather than to require BART will provide the States with the flexibility to achieve greater reasonable progress towards the national goal at a lower cost, while still addressing the Congressional concern that *existing sources contributing to visibility impairment be required to control emissions appropriately*."<sup>73</sup>

Utah's "BART Alternative" is not approvable by EPA unless it satisfies the requirements of 40 C.F.R. § 51.308(e)(2), including, most fundamentally, the requirement to achieve "greater reasonable progress than would be achieved through the installation and operation of BART."<sup>74</sup> Also, Utah's Regional Haze SIP must contain "the following plan elements and include documentation for all required analyses:

(i) A demonstration that the emissions trading program or other alternative measure will achieve greater reasonable progress than would have resulted from the installation and operation of BART at all sources subject to BART in the State and covered by the alternative program. This demonstration must be based on the following:

...(C) An analysis of the best system of continuous emission control technology available and associated emission reductions achievable for each source within the State subject to BART and covered by the alternative program. This analysis must be conducted by making a determination of BART for each source subject to BART and covered by the alternative program as provided for in paragraph (e)(1) of this section, unless the emissions trading program or other alternative measure has been designed to meet a requirement other than BART (such as the core requirement to have a long-term strategy to achieve the reasonable progress goals established by States)...

(D) An analysis of the projected emissions reductions *achievable through* the trading program or other alternative measure.

(E) A determination under paragraph (e)(3) of this section or otherwise *based on the clear weight of evidence* that the trading program or other alternative measure achieves greater reasonable progress than would be achieved through the installation and operation of BART at the covered sources.

(iii) A requirement that all necessary emission reductions take place during the period of the first longterm strategy for regional haze. To meet this requirement, the State must provide a detailed description of the emissions trading program or

<sup>72</sup> 1999 Regional Haze Rule, 64 Fed. Reg. at 35,742.

<sup>73</sup> *Id.* at 35,741 (emphasis added).

<sup>74</sup> 40 C.F.R. § 51.308(e)(2).



other alternative measure, including *schedules for implementation, the emission reductions required by the program*, all necessary administrative and technical procedures for *implementing* the program, rules for accounting and monitoring emissions, and procedures for enforcement.

iv) a demonstration that *the emission reductions resulting from the emission trading program or other alternative measure* will be surplus to those reductions resulting from measures adopted to meet the requirements of the CAA as of the baseline date of the SIP...

(3) A State which opts under 40 CFR 51.308(e)(2) to implement an emission trading program or other alternative measure rather than to require sources subject to BART to install, operate, and maintain BART may satisfy the final step of the demonstration required by that section as follows: If the distribution of emissions is not substantially different than under BART, and *the alternative measure results in greater emission reductions*, then the alternative measure may be deemed to achieve greater reasonable progress. If the distribution of emissions is significantly different, the State must conduct dispersion modeling to determine differences in visibility between BART and the trading program for each impacted Class I area, for worst and best 20 percent days. The modeling would demonstrate “greater reasonable progress” if both of the following two criteria are met: (i) Visibility does not decline in any Class I area, and (ii) *There is an overall improvement in visibility, determined by comparing the average differences between BART and the alternative over all affected Class I areas.*<sup>75</sup>

EPA has both the authority and a legal obligation to disapprove a regional haze SIP that fails to comply with the statutory purpose of the visibility program or its implementing regulations. In lieu of approving a non-compliant SIP, EPA must promulgate a FIP to fill the void left by Utah’s deficient state proposal.

## **B. Utah’s Discretion to Develop a BART Alternative is Circumscribed by the Regional Haze Rule and EPA Oversight**

While the Regional Haze Rule allows states to rely on alternative programs that legitimately achieve better-than-BART results, the states “exercise this authority with federal oversight.” The EPA reviews all SIPs to ensure that the plans comply with the statute and EPA “may not approve any plan that ‘would interfere with any applicable requirement’” of the CAA.<sup>76</sup> Applicable requirements include, for example, the requirement to achieve at a minimum the level of visibility improvement that reflects implementation of BART on sources subject to BART and the requirement to achieve “reasonable progress” toward the national goal of

<sup>75</sup> 40 C.F.R. §§ 51.308(e)(2)(i)-(iv) and § 51.308(e)(3)(emphasis added).

<sup>76</sup> *Oklahoma v. EPA*, 723 F.3d 1201, 1204 (10th Cir. 2013) (quoting 42 U.S.C. § 7410(l)), cert. denied, 134 S. Ct. 2662 (May 27, 2014); accord *N. Dakota v. EPA*, 730 F.3d 750, 757 (8th Cir. 2013), cert. denied, 134 S. Ct. 2662 (May 27, 2014). *See also Arizona v. EPA*, 2016 WL 722685, at \*9 (“Congress intended that EPA, not the states alone, ultimately ensure that state determinations as to regional haze comply with the Act, and so authorized EPA to disapprove state “analysis that is neither reasoned nor moored to the [Act’s] provisions.”).

eliminating human-caused visibility impairment.<sup>77</sup> EPA Region 8 applied these principles recently for the state of Wyoming. In partially rejecting Wyoming’s SIP, EPA properly “review[ed] the reasonableness of the State’s BART determinations in light of the goal of achieving natural visibility conditions” and disapproved Wyoming’s selection of the weakest available NO<sub>x</sub> controls for Laramie River, Wyodak, and Dave Johnston 3, which are insufficient to assure reasonable progress toward that goal.<sup>78</sup> In lieu of Wyoming’s inadequate determinations, EPA identified SCR as the appropriate BART technology to control NO<sub>x</sub> emissions from those units.

In the context of alternative programs, EPA properly reviews SIPs for compliance with 40 C.F.R. § 51.308(e)(2)-(3), with the overall objective of determining, based on available information and reasonable assumptions, whether the alternative program will actually achieve greater reasonable progress towards improving visibility than would have been achieved by implementation of the BART requirements at BART-subject sources. If the record does not support a determination that “the alternative measure results in greater emission reductions,” that “[t]here is an overall improvement in visibility,” or that the “clear weight of evidence” supports a determination that the alternative measure achieves greater reasonable progress than BART,<sup>79</sup> then EPA may not approve the alternative program and must impose a FIP satisfying the requirements of BART. Thus, it is clear that Utah bears the heavy burden of proving that its alternative satisfies the “clear weight of evidence” test.

Utah’s BART Alternative is arbitrary and capricious because it relies on legally and factually erroneous assumptions. Utah’s BART Alternative also fails to demonstrate by the universally accepted metric that it “will achieve greater reasonable progress than would have resulted from the installation and operation of BART at all sources subject to BART in the State and covered by the alternative program.”<sup>80</sup> Most importantly, Utah’s latest Regional Haze SIP fails to require *any* new emissions reductions.

#### **IV. SCR CONSTITUTES BART FOR NO<sub>x</sub> EMISSIONS FROM HUNTER UNITS 1 AND 2 AND HUNTINGTON UNITS 1 AND 2**

The Conservation Organizations support EPA’s co-proposal finding that SCR constitutes BART for NO<sub>x</sub> emissions from Hunter Units 1 and 2 and Huntington Units 1 and 2. Not only does EPA’s five-factor BART analysis support SCR as BART—predicting some of the most significant visibility improvements at some of the lowest costs estimated across the Regional Haze Program—but the Conservation Organizations’ own analyses validate EPA’s.

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<sup>77</sup> 42 U.S.C. § 7491(b)(2).

<sup>78</sup> Final Rule, Wyoming Regional Haze, 79 Fed. Reg. 5,032, 5,090 (Jan. 30, 2014).

<sup>79</sup> 40 C.F.R. § 51.308(e)(2)(i)(E), (e)(3).

<sup>80</sup> *Id.* § 51.308(e)(2)(i).

### A. SCR Would Achieve Significant Emissions Reductions at a Reasonable Cost

SCR is extremely cost effective for Utah's BART units. EPA projected costs of SCR ranging from \$2,380 to \$2,563/ton of NO<sub>x</sub> removed.<sup>81</sup> The Conservation Organizations' estimates are similar.<sup>82</sup> Specifically, the cost effectiveness of SCR on Hunter Units 1 and 2 and Huntington Units 1 and 2 is in the range of \$2,222-2,276/ton of NO<sub>x</sub> removed.<sup>83</sup>

The cost effectiveness for SCR on these units is much less than at other coal units in the west where EPA has required SCR as BART. For example, in its Arizona regional haze action, EPA found SCR costs to be reasonable for Cholla Units 2, 3, and 4 at \$3,114 to \$3,472/ton of NO<sub>x</sub> removed, for Apache Units 2 and 3 at \$2,275 to \$2,908/ton, and for Coronado Unit 1 of \$2,405/ton.<sup>84</sup> For Colorado, EPA approved the state's determination that SCR was BART for Hayden Station Units 1 and 2 based on average cost-effectiveness estimates of \$3,385/ton and \$4,064/ton.<sup>85</sup> For Wyoming, EPA found SCR to be BART even at units for which costs greatly exceeded the cost for SCR on PacifiCorp's Utah units. EPA found SCR costs of \$4,424-\$4,461/ton (in 2008 dollars) to be reasonable for Laramie River Station Units 1-3.<sup>86</sup> SCR costs of \$4,036/ton (in 2008 dollars) are reasonable for Wyodak.<sup>87</sup> SCR costs of \$2,635/ton (in 2008 dollars) are reasonable for Dave Johnston Unit 3.<sup>88</sup> SCR costs of \$3,469/ton (in 2008 dollars) are reasonable for Naughton Unit 3.<sup>89</sup> Consistent with these determinations for other states, SCR

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<sup>81</sup> See 81 Fed. Reg. at 2,035, 2,039, 2,042, 2,046.

<sup>82</sup> See 2016 Stamper TSD, at 28 (separately filed on [www.regulations.gov](http://www.regulations.gov)). On December 22, 2014, the Conservation Organizations submitted a detailed comment letter and expert reports to the State of Utah establishing that SCR is BART for NO<sub>x</sub> emissions at Utah's BART sources—Hunter Units 1 and 2 and Huntington Units 1 and 2. Exhibits 2 and 13 hereto. Utah never responded to these comments.

<sup>83</sup> *Id.*

<sup>84</sup> Proposed Rule, Arizona Regional Haze, 77 Fed. Reg. 42,834, 42,856-57, 42,860, 42,862 (July 20, 2012); Final Rule, Arizona Regional Haze, 77 Fed. Reg. 72,512 (Dec. 5, 2012).

<sup>85</sup> Proposed Rule, Colorado Regional Haze, 77 Fed. Reg. 18,069 (Mar. 26, 2012); Final Rule, Colorado Regional Haze, 77 Fed. Reg. 76,871 (Dec. 31, 2012).

<sup>86</sup> Final Rule, Wyoming Regional Haze, 79 Fed. Reg. at 5,039-40.

<sup>87</sup> *Id.* at 5,044, 5,046.

<sup>88</sup> *Id.* at 5,042, 5,044.

<sup>89</sup> *Id.* at 5,043, 5,046; *see also* 2016 Stamper TSD at 32.

also is reasonably cost effective for Utah's four BART units.<sup>90</sup> As discussed below, the extremely cost effective controls at Utah BART sources also result in remarkable visibility improvement.

**B. The Visibility Benefits of SCR are Substantial and Warrant SCR as BART on Hunter and Huntington**

Both EPA and the Conservation Organizations performed modeling that demonstrates the tremendous visibility benefits that SCR on all four units would yield in the region's Class I areas. As part of its FIP analysis, EPA performed visibility modeling to determine the benefits of installing various control options at the Utah BART sources.<sup>91</sup> EPA conducted this visibility modeling because Utah's SIP modeling did not contain an analysis of control options for individual sources under a five-factor analysis.<sup>92</sup> Instead, Utah assessed the combined visibility impacts of all BART and non-BART sources and thus failed to assess visibility benefits of individual units as required by EPA BART regulations. EPA's visibility modeling also assessed the visibility benefits of all technically feasible control options (LNB/OFA, SNCR, SCR) rather than Utah's modeling approach of only evaluating SCR controls.<sup>93</sup>

Unlike Utah's SIP analysis, EPA's CALPUFF visibility modeling complies with EPA regulations and guidelines and is consistent with other EPA BART determinations. For example, without EPA approval, PacifiCorp installed new LNB controls at each of the BART units over the time period of 2006-2014.<sup>94</sup> PacifiCorp installed these new LNB controls prior to a formal BART determination, which could have unfairly influencee the BART analysis process. EPA rejected PacifiCorp's strategy and instead correctly assessed baseline emissions from the mandated 2001-2003 baseline period—prior to the installation of NOx controls at the BART units.

Consistent with EPA regulations and guidelines, EPA also appropriately presented data on the highest of the 98<sup>th</sup> percentile visibility improvements at each of the nine affected Class I

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<sup>90</sup> In addition to EPA's proper comparison of the average cost effectiveness of SCR on Utah's BART units with estimated costs for units in other states, EPA's co-proposal also observes that the incremental cost of SCR compares favorable with EPA's other BART determinations. *See, e.g.*, 81 Fed. Reg. at 2,037. However, as the Conservation Organizations have previously commented to EPA, "incremental cost effectiveness" of controls is not a proper consideration under the BART guidelines. Comparing the incremental costs of controls against the costs of the next most effective controls may always result in the choice of the cheapest option if carried to the extreme. Where selection of a particular technology as BART is supported by reasonable total costs, *incremental* costs may not be used to override that choice. Similar considerations apply to the use of incremental visibility benefits.

<sup>91</sup> 81 Fed. Reg. 2,032-48.

<sup>92</sup> *Id.* at 2,033.

<sup>93</sup> *Id.*

<sup>94</sup> *Id.* at 2,018.

areas for the three meteorological years from 2001 through 2003.<sup>95</sup> EPA also presented data on number of days (summed across three years) with visibility impacts greater than the contribution and causation thresholds--0.5 dv and 1.0 dv.<sup>96</sup> EPA analyzed visibility benefits on both a unit-specific basis, as well as a source-wide basis. EPA also analyzed total visibility benefits along with the incremental visibility benefit over other control scenarios.

EPA's modeling evaluated visibility benefits at the "big five" national parks in Utah (Canyonlands, Zion, Arches, Capitol Reef, and Bryce National Parks), three Class I areas in Colorado (Black Canyon of the Gunnison, Mesa Verde, and Flat Tops), as well as Grand Canyon National Park. EPA's proposed rule correctly states that the BART sources in Utah "significantly impact[] several Class I areas" including the original focal point of the visibility program—Grand Canyon National Park.<sup>97</sup>

EPA's visibility analysis correctly found that the selection of LNB with SOFA and SCR provided "substantial visibility benefits, both total and incremental" at each of the four Hunter and Huntington BART units. The table below summarizes some of highlights of EPA's visibility modeling results, such as change in deciview resulting from installation of SCR at each unit, the reduction of the number of days greater than 1.0 dv over baseline emissions resulting from installation of SCR on each unit, as well as the cumulative benefits of these metrics over all Class I areas.<sup>98</sup>

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<sup>95</sup> *Id.* at 2,035.

<sup>96</sup> *Id.*

<sup>97</sup> *Id.* at 2,037.

<sup>98</sup> The Conservation Organizations acknowledge that cumulative visibility improvement may be somewhat overstated by summing visibility modeling results for all units at a single source, where the modeling exercise partitioned nitrate formation on a unit-specific basis. However, because the exaggeration is consistent for all BART determinations discussed in this Part with the exception of the Cholla modeling, this approach still offers a useful tool for depicting and comparing cumulative visibility benefits.

**Table 1**

<b>Unit</b>	<b>dv improve*</b>	<b>cumulative dv+</b>	<b>days &gt; 1.0 dv#</b>	<b>cumulative &gt; dv^</b>
Hunter 1	1.545	6.65	52	204
Hunter 2	1.25	5.357	42	162
Huntington 1	1.881	6.862	60	230
Huntington 2	1.657	6.053	49	200
Totals	6.333	24.922	203	796

\* dv improvement over baseline at Canyonlands Nation Park resulting from installation of SCR scenario at each unit.

+ cumulative dv improvement over baseline at all 9 Class 1 areas resulting from installation of SCR scenario at unit.

# the reduction of the number of days greater than 1.0 dv over baseline at Canyonlands and Arches (Huntington Unit 1) (totaled over 3 years) resulting from installation of SCR scenario at unit.

^ the cumulative reduction of the number of days greater than 1.0 dv over baseline at all nine Class 1 areas (totaled over three years) resulting from installation of SCR scenario at unit.

As shown above, installation of LNB/OFA/SCR on each Utah BART unit provides substantial visibility improvement. For example, installation of SCR at Huntington Unit 1 will result in a substantial visibility benefit of 1.881 dv over baseline at Arches National Park. The cumulative visibility benefit from installation of SCR on all four BART units is also profound.<sup>99</sup> Visibility would cumulatively improve by nearly 25.0 dv at all nine Class 1 areas by installing SCR on all four Utah BART units. Additionally, installation of SCR at Huntington Unit 1 would, on average, result in 20 fewer days per year of visibility impact greater than 1.0 dv at Arches National Park. Similarly, visibility impairment greater than 1.0 dv at all nine Class 1 areas would be reduced on average by 265 days/year. These results clearly show the extraordinary visibility benefits resulting from installation of SCR on each and every Utah BART unit.

EPA's visibility modeling results also compares favorably to other EPA BART determinations where SCR was required on coal plants in the Interior West. For example, EPA compared its Utah BART visibility modeling results to that of sources in Arizona (Cholla), Colorado (Hayden) and Wyoming (Laramie River).<sup>100</sup> EPA found that "selection of LNB and SOFA with SCR as BART...would be fully consistent with these prior actions."<sup>101</sup> In fact, when compared to these out-of-state units, installation of SCR on the Hunter and Huntington units provides even greater visibility improvement. The following table compares the respective maximum visibility improvement of the out-of-state sources to the Utah BART units.

<sup>99</sup> See *Arizona v. EPA*, 2016 WL 722685, at \*15-16 (approving EPA's consideration of cumulative visibility benefits).

<sup>100</sup> 81 Fed. Reg. at 2,037-38.

<sup>101</sup> *Id.* at 2,037.

**Table 2**

Units	Max dv improve	Cumulative dv
Hunter 1 & 2	$1.545 + 1.250 = \mathbf{2.795}$	$6.65 + 5.357 = \mathbf{12.007}$
Huntington 1 & 2	$1.881 + 1.657 = \mathbf{3.538}$	$6.862 + 6.053 = \mathbf{12.915}$
Cholla 2, 3, & 4*	1.34	7.21
Laramie River 1, 2, & 3**	$0.52 + 0.53 + 0.57 = 1.62$	n/a
Hayden 1 & 2***	$1.12 + 0.85 = 1.97$	n/a

\* 77 Fed. Reg. at 42,861; 81 Fed. Reg. at 2,037

\*\* 79 Fed. Reg. at 5,047; 81 Fed. Reg. at 2,037

\*\*\* 77 Fed. Reg. at 18,069; 81 Fed. Reg. at 2,037

The maximum delta dv improvement due to SCR on both BART-subject units at either Hunter or Huntington far exceeds the maximum source-wide improvement at the other similar sources identified in EPA's proposed rule. On a per unit basis, the maximum delta dv improvement due to SCR on any of the four Utah BART units is between 0.41 and 1.32 dv higher than the other similar sources (1.40 and 1.77 per unit for Hunter and Huntington, respectively, versus 0.45, 0.54, and 0.99 dv per unit for Cholla, Laramie River, and Hayden, respectively). Moreover, installation of SCR at **three** units at Cholla would result in a cumulative visibility improvement of 7.21 dv at 13 Class 1 areas. However, installing SCR at the **two** Hunter units greatly exceeds the benefits at Cholla by producing greater than a 12 dv improvement at only 9 Class 1 areas. When the Hunter and Huntington units are combined, the cumulative visibility improvements far surpass the Cholla plant by realizing a nearly 25 dv cumulative improvement across the nine Class 1 areas. Installing SCR at Hunter and Huntington can realize one of the greatest cumulative visibility improvements nationwide.

Finally, EPA's modeling results are also very similar to the visibility modeling analysis presented by the Conservation Organizations. As is presented in the attached expert report of Dr. Andrew Gray, the visibility benefits of installing SCR at Hunter and Huntington at **eight** Class I areas results in a cumulative benefit of 22.64 dv.<sup>102</sup> This compares favorably to EPA's finding of a 24.922 cumulative dv improvement at the **nine** Class 1 areas resulting from installation of SCR.

Considering the visibility benefits from BART controls on both BART-subject units at Hunter or Huntington, as the BART Guidelines require, demonstrates the unmistakable significance of these improvements.<sup>103</sup>

In summary, we agree with EPA that installing SCR at Hunter and Huntington compares well with, is consistent with, and often exceeds, visibility improvements at other plants in the Interior West. For this rulemaking, we also agree with EPA's methodology of comparing its Utah BART determinations with those from other EPA SCR BART determinations in the

<sup>102</sup> Dec. 22 2014 Gray Modeling Report, at 18, attached hereto as Ex. 13; *see also* 2016 Gray Modeling Report, Attachment A, at A-14 (filed separately on [www.regulations.gov](http://www.regulations.gov)).

<sup>103</sup> *See* BART Guidelines, 40 C.F.R. Pt. 51, App. Y, § IV.D.5.

Interior West. And while these extraordinary visibility benefits alone justify selection of SCR as BART for the four Hunter and Huntington units, we also agree with EPA’s conclusion that the visibility benefits justify the cost of SCR at these units.

## **V. UTAH’S BART ALTERNATIVE DOES NOT ACHIEVE GREATER REASONABLE PROGRESS THAN BART**

In lieu of the significant emissions reductions that would be achieved through adequate implementation of the CAA’s BART requirements on Hunter Units 1 and 2 and Huntington Units 1 and 2, Utah has proposed an “alternative program” that would require no new emissions reductions on any source in the state. Instead, Utah’s plan would allow Hunter and Huntington to continue to emit NO<sub>x</sub> at current high levels while taking credit for emissions reductions primarily at two non-BART facilities—PacifiCorp’s Carbon Plant and Hunter Unit 3—that already have occurred and that will not and cannot be reversed. While EPA has approved alternative programs found to satisfy the regulatory criteria, including the regulatory requirement to achieve “greater reasonable progress” than BART, it has never used an alternative program to exempt all of the state’s BART sources from future emission reductions largely in exchange for historical emissions reductions at geographically distinct non-BART sources. If Utah’s program were approved, there would be nothing to stop states from attempting to satisfy Regional Haze Rule obligations through historical emissions reductions achieved from implementation of any other federal or state pollution-reduction measure affecting any source in the past. Were it allowed, Utah’s approach would gut the Regional Haze Rule’s BART requirements depriving Class I areas and their millions of visitors of just visibility improvements mandated by the Clean Air Act.<sup>104</sup>

Moreover, even if Utah’s approach was permissible, Utah’s alternative program must be rejected because it would fail to achieve greater reasonable progress than BART. EPA regulations provide that “greater reasonable progress” demonstrations be based on one of two tests: 1) under 40 C.F.R. § 51.308(e)(3), that “the alternative measure results in greater emission reductions” or greater “overall improvement in visibility” based on modeling than does BART; or 2) under 40 C.F.R. § 51.308(e)(2)(i)(E), that the alternative measure achieves greater reasonable progress based on the “clear weight of evidence.” Utah’s alternative measure fails both tests.

### **A. Utah’s BART Alternative Does Not Achieve Greater Emissions Reductions or Overall Visibility Improvement**

#### **1. Utah’s Regional Haze SIP Does Not Achieve Greater Emissions Reductions than BART**

EPA’s proposed rule correctly rejects Utah’s reliance on the “greater emission reduction” test<sup>105</sup> because Utah’s BART Alternative would result in an increase of NO<sub>x</sub> emissions when

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<sup>104</sup> 42 U.S.C. § 7491(b)(2)(A).

<sup>105</sup> 40 C.F.R. § 51.308(e)(3).



compared to application of BART controls.<sup>106</sup> The “greater emission reduction” test should be rejected for the additional reason that the distribution of emissions is substantially different under Utah’s BART Alternative than under BART. As highlighted in the Expert Report of Dr. Andrew Gray, the Carbon plant is geographically distinct from the Hunter and Huntington plants. Therefore, the spatial distribution of emissions from the plants is substantially different and affect different Class I areas.<sup>107</sup> For these reasons, and the reasons stated in EPA’s proposed rule, the Conservation Organizations agree that EPA may not rely on the “greater emission reduction” test to approve Utah’s BART Alternative.

However, even assuming *arguendo*, that the test is applicable, Utah’s alternative program does not comply with the Regional Haze Rule for the basic reason that it is not better than BART. EPA’s BART alternative regulations require evidence that “the alternative measure results in greater emission reductions” than would installation and operation of BART controls.<sup>108</sup> In support of its BART Alternative, Utah conducted a Projected Emission Reduction Analysis, which purported to reflect emission reductions that would be achieved through BART (the “BART benchmark”), on the one hand, and the proposed alternative program on the other.<sup>109</sup> As discussed above, Utah employed arbitrary assumptions in its Projected Emission Reduction Analysis for the BART benchmark. Namely, Utah arbitrarily assumed that if BART, and not the alternative program, were required at Hunter and Huntington, the Carbon plant would have continued operating after April 15, 2015 at uncharacteristically high emissions levels and without complying with mandatory MATS emissions limits, and that PacifiCorp would somehow remove the most recently installed LNB from Hunter Unit 3 and emit NOx rates higher than its currently permitted limit. As a result, Utah significantly overstated the overall haze-causing emissions that would occur under the BART benchmark scenario.

#### a. The Carbon Plant

Utah’s assumed emissions from the Carbon Plant in its “BART benchmark” scenario are erroneous, fatally biasing Utah’s comparison of BART to the BART Alternative. As an initial matter, the Carbon Plant was permanently closed on April 15, 2015 and is in the process of being dismantled. Thus, Utah’s assumption that these units could continue to emit pollutants at 2012 inflated emission rates is factually inaccurate and defies reality.

Moreover, even assuming for the sake of argument that the Carbon Plant would continue operating under the BART scenario, Utah’s assumed future SO<sub>2</sub> emissions from the plant are unrealistically high. First, Utah’s “BART benchmark” scenario identifies the plant’s emissions from 2012-2013, which were significantly greater than in previous years. As explained in the attached Stamper TSD, the Carbon plant’s SO<sub>2</sub> emissions over the 2012-2013 timeframe were

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<sup>106</sup> 81 Fed. Reg. at 2,028.

<sup>107</sup> See 2016 Gray Modeling Report, at 11-13, 22.

<sup>108</sup> 40 C.F.R. § 51.308(e)(3).

<sup>109</sup> See 81 Fed. Reg. at 2,015. See also UDAQ, “Review of 2008 PM BART Determination and Recommended Alternative to BART for NO<sub>x</sub>” p. 9, Table 2 (hereafter, “UDAQ Staff Review”), attached hereto as Ex. 15).

significantly greater than Carbon's historical emissions.<sup>110</sup> While Utah assumed that Carbon's peak emissions in 2012-2013 of 3,160 lb/hr would continue under the BART scenario, the long-term trend shows otherwise, with Carbon's median maximum daily SO<sub>2</sub> emissions from 2001 to 2014 (2,506 lbs/hr).<sup>111</sup> Ms. Stamper determined that the reason for Carbon's recent SO<sub>2</sub> emissions increase was due to burning of coal with unusually high sulfur content that was not reflective of typical operations for the Carbon plant and would not likely continue past 2016.<sup>112</sup> Specifically, the Carbon Plant began burning significant quantities of medium sulfur coal from the West Ridge Mine in 2010 through at least 2013. The sulfur content of the West Ridge coal shipped to the Carbon Plant ranged from 0.98 to 1.22% from 2010 to 2013, compared to sulfur contents of 0.39% to 0.66% of the other coals used by the Carbon Plant during this timeframe.<sup>113</sup> Moreover, the West Ridge Mine was scheduled to close in 2016, indicating that the Carbon Plant's uncharacteristically high SO<sub>2</sub> emissions attributable to this mine would not continue beyond 2016.<sup>114</sup>

Second, Utah's projected Carbon emissions under the BART scenario ignores the fact that if the Carbon units were to continue operating, they would be subject to EPA's Mercury and Air Toxic Standard ("MATS") regulations that imposed emissions limitations on the plant beginning April 16, 2015.<sup>115</sup> Beyond that date, the units would have had to meet MATS emissions limits for SO<sub>2</sub> and/or PM. The federal SO<sub>2</sub> MATS emissions limit is 0.20 lbs/MMBtu.<sup>116</sup> In 2012-2013 Carbon Units 1 and 2 were emitting SO<sub>2</sub> at an average rate of 1,348 lbs/hour and 1,812 lbs/hr respectively. The corresponding SO<sub>2</sub> emission rates assuming compliance with MATS would be 234 lbs/hour and 323 lbs/hour.<sup>117</sup> Accordingly, had the plant continued to operate beyond April 15, 2015, the Carbon units would have had to reduce SO<sub>2</sub> emissions by approximately 82%.<sup>118</sup> Utah's projected emissions reduction analysis ignores this fact and instead assumes that these units could have continued to operate without SO<sub>2</sub> (or PM) controls in perpetuity at their 2012-2013 emission rates without complying with the currently mandated federal MATS emissions limits. Utah's projected emissions reduction analysis is arbitrary, factually incorrect, contrary to law and defies reality because it fails to project SO<sub>2</sub>

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<sup>110</sup> 2016 Stamper TSD, at 33-42; *see also* 2016 Gray Modeling Report, at 23.

<sup>111</sup> 2016 Stamper TSD, at 42 (Table 10); 2016 Gray Modeling Report, at 24.

<sup>112</sup> 2016 Stamper TSD at 34-37.

<sup>113</sup> *Id.* at 36-37.

<sup>114</sup> *Id.* at 37-38.

<sup>115</sup> Final Rule, National Emission Standards for Hazardous Air Pollutants From Coal and Oil-Fired Electric Utility Steam Generating Units and Standards of Performance for Fossil-Fuel-Fired Electric Utility, Industrial-Commercial-Institutional, and Small Industrial-Commercial-Institutional Steam Generating Units, 77 Fed. Reg. 9,304 (Feb. 16, 2012).

<sup>116</sup> This is an acid gas surrogate limit. *See* 2016 Stamper TSD, at 43.

<sup>117</sup> *Id.* at 44-45.

<sup>118</sup> *Id.*

emissions reductions mandated by the MATS rule that would have restricted such emissions at Carbon after April 15, 2015.<sup>119</sup>

Utah's SIP submission concedes that Carbon's future emissions would be lower than past emissions upon which Utah relied in calculating its BART benchmark. Specifically, Utah claims that "PacifiCorp could choose to meet the MATS requirements through other measures..." than retirement.<sup>120</sup> Thus, Utah admits that: 1) had PacifiCorp continued to operate the Carbon plant, it would have had to meet MATS requirements; and 2) PacifiCorp would have had to implement "other measures" (i.e., SO<sub>2</sub> pollution controls) to continue operating. Despite these admissions, Utah's emissions reduction analysis and visibility modeling use false and inflated SO<sub>2</sub> emissions data from 2012-2013 that ignores the admitted SO<sub>2</sub> emissions reductions that would have to occur for Carbon to operate into the future. As such, Utah's emissions reduction analysis and visibility modeling is inaccurate, and has no basis in reality.

Utah nonetheless assigns credit to its BART Alternative for eliminating 100 percent of Carbon's SO<sub>2</sub> emissions from 2012-2013 levels on the erroneous ground that PacifiCorp was under no enforceable requirement to permanently close and retire the Carbon units.<sup>121</sup> This statement is factually inaccurate for a number of reasons. First, the requirement to permanently retire Carbon Units 1 and 2 by April 15, 2015 was made enforceable through public service commission filings in several states. For example,

- On August 7, 2012 PacifiCorp (through Rocky Mountain Power) entered into a stipulation filed with the Utah Public Service Commission regarding an accounting order to defer costs related to the decommissioning of the Carbon Plant.<sup>122</sup> The stipulation allowed for recovery from Utah ratepayers of Utah's allocated shares of the prudently incurred Carbon Removal Costs from the retirement date of the Carbon Plant, currently estimated to occur in April 2015 ....<sup>123</sup> The retirement of the Carbon plant in fact occurred on April 15, 2015. The stipulation was entered as an Order of the Utah Public Service Commission.<sup>124</sup>
- As PacifiCorp informed the Idaho Public Utilities Commission, "[t]he current emissions profiles of the Carbon units do not meet MATS limits for all pollutants regulated under that rule. The Carbon units have not been, and cannot economically

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<sup>119</sup> Even if PacifiCorp had elected to operate the Carbon units in violation of MATS, the CAA authorizes either EPA or citizens to seek injunctive relief requiring closure of the units or compliance with the MATS emission limits. 42 U.S.C. §7602(a)(1). Thus, Utah's assumption that these units could have defied the law in perpetuity is arbitrary and capricious.

<sup>120</sup> UDAQ Staff Review, Exhibit 15, at 7.

<sup>121</sup> *Id.*

<sup>122</sup> Report and Order dated September 19, 2012 Utah Public Service Commission attached hereto as Exhibit 16 hereto.

<sup>123</sup> *Id.* at pp. 15-16.

<sup>124</sup> *Id.*

be, retrofitted with scrubbers, baghouses, or other significant emissions control equipment investments that would foster the Carbon plant's ability to comply.”<sup>125</sup>

- As PacifiCorp reported to the California Public Utilities Commission, an air pollution control upgrade may be impossible, as “[t]he Carbon plant is located in the mouth of a canyon with no room to install significant environmental retrofits.”<sup>126</sup>
- On August 21, 2014 PacifiCorp responded to a bench request by the Oregon Public Utilities Commission (“Oregon PUC”) by representing it would retire the Carbon plant and that such retirement would “reduce its ability to make wholesale sales.”<sup>127</sup> PacifiCorp entered into a stipulation with parties to that proceeding to address this financial issue and others.<sup>128</sup> The stipulation was approved as an Order of the Oregon PUC.<sup>129</sup>
- On January 23, 2015, the Wyoming Public Service Commission entered its “Findings of Fact, Conclusions of Law, Decision and Order *nunc pro tunc*” authorizing, among other things, a one time recovery to PacifiCorp of “non-labor operations and maintenance expenses required to operate the Carbon plant until its April 2015 retirement...”<sup>130</sup>
- PacifiCorp never procured the necessary technology for MATS compliance nor sought any extension of the April 15, 2015 MATS deadline, because the company never had any intention of operating the plant beyond that date.
- Indeed, the company applied for and received regulatory approval for an accounting order that enabled the shutdown.<sup>131</sup>

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<sup>125</sup> In the Matter of the Application of Rocky Mountain Power for a Deferred Accounting Order Authorizing the Creation of a Regulatory Asset Associated with the Remaining Book Value of the Carbon Plant, Case No. PAC-E-12-08, Application for Accounting Order, ¶ 4 (Id. Pub. Util. Comm’n May 3, 2012) attached hereto as Exhibit 17. In addition to Carbon’s inability to meet MATS requirements, PacifiCorp also anticipates difficulty demonstrating attainment of the 1-hour NO<sub>x</sub> or 1-hour SO<sub>2</sub> National Ambient Air Quality Standards. *Id.* ¶ 5.

<sup>126</sup> *Id.* ¶ 5; *see also* Pacific Power, Advice Letter 496-E to Calif. Pub. Util. Comm’n, at 2 (Dec. 4, 2013), attached as Exhibit 18.

<sup>127</sup> Oregon Public Utilities Commission Order 14-331, p. 2, attached hereto as Exhibit 19.

<sup>128</sup> *Id.*

<sup>129</sup> *Id.*

<sup>130</sup> Wyoming Public Service Commission “Findings of Fact, Conclusions of Law, Decision and Order *nunc pro tunc*, p. 39, ¶179, attached hereto as Exhibit 20.

<sup>131</sup> Exhibit 20 hereto.

Accordingly, the Carbon retirement (and corresponding emissions reductions) is enforceable regardless of Utah's BART alternative and statements to the contrary in Utah's latest Regional Haze SIP are factually and legally erroneous. Indeed, the retirement not only was enforceable, it was inevitable given PacifiCorp's professed inability to make the retrofits needed to comply with MATS at the Carbon Plant because of the physical constraints the facility faces.

In summary, Utah's latest Regional Haze SIP does not require any legitimate or new emissions reductions from the Carbon Plant that do not already exist. The Carbon Plant retirement was mandated by pre-existing public service commission orders and agreements adopted over the past three years. Indeed, the Carbon Plant is being dismantled. Even if the Carbon Plant had continued to operate, it would have had to reduce its SO<sub>2</sub> and/or PM emissions to comply with the MATS rule and any SO<sub>2</sub> reductions could not be credited in any case because of the state's participation in the 309 program. For all of these reasons, Utah's latest Regional Haze SIP and corresponding visibility modeling is arbitrary, capricious, and unsupported by the administrative record.

Moreover, Utah should not be allowed any more emissions-reduction credit for the shutdown of the Carbon units than existed at the time of the baseline date of the regional haze SIP. Those emissions are most properly reflected in the 2001-2003 average, the same averaging period that Utah used to measure emission reductions from for Hunter Unit 3.<sup>132</sup> In the table below (Table 17 of the 2016 Stamper TSD), the 2001-2003 average for SO<sub>2</sub> and NO<sub>x</sub> emissions at each Carbon unit is provided.

**Table 3. 2001-2003 Annual Average SO<sub>2</sub> and NO<sub>x</sub> Emissions From Carbon Units 1 and 2**<sup>133</sup>

Year	Carbon Unit 1 SO <sub>2</sub> , tons/year	Carbon Unit 1 NO <sub>x</sub> , tons/year	Carbon Unit 2 SO <sub>2</sub> , tons/year	Carbon Unit 2 NO <sub>x</sub> , tons/year
2001	2,088	1,282	3,100	1,844
2002	2,721	1,377	4,043	2,001
2003	2,048	1,278	3,440	2,087
<b>2001-2003 average</b>	<b>2,286</b>	<b>1,312</b>	<b>3,528</b>	<b>1,977</b>
<i>Compare to 2012- 2013 Average used by Utah</i>	<i>3,388</i>	<i>1,408</i>	<i>4,617</i>	<i>1,940</i>

<sup>132</sup> 81 Fed. Reg. 2,015, Table 3, n.2.

<sup>133</sup> Data from EPA's Air Markets Program Database.

The emissions-reduction credit allowed for the shutdown of the Carbon units should be no higher than the annual average SO<sub>2</sub> and NO<sub>x</sub> emissions shown in the table above, which reflect the 3 year average of Carbon Units 1 and 2's annual emissions at the time of the baseline date of the Utah regional haze plan.

As discussed more fully below, when the Carbon Plant's future SO<sub>2</sub> emissions are properly evaluated in the BART scenario, it is abundantly clear that Utah's BART Alternative does not achieve greater emissions reductions, or greater reasonable progress, than would installation and operation of SCR on the Hunter and Huntington BART units.

b. Hunter Unit 3

Similar to the Carbon Plant, Utah's projected emissions reduction analysis assumes, under the Most Stringent NO<sub>x</sub> scenario, that Hunter Unit 3 could emit NO<sub>x</sub> emissions without operating its 2008 low-NO<sub>x</sub> burners and the corresponding permitted emissions limit. There is no evidence supporting Utah's assumption that PacifiCorp plans to, or could, remove its 2008 LNBs and defy the corresponding already-permitted NO<sub>x</sub> emissions limit. Accordingly, the assumptions used in Utah's projected emissions reduction analysis have no factual support in the administrative record, are arbitrary, capricious, and contrary to law. In fact, when the proper post-2008 Hunter 3 NO<sub>x</sub> emissions reductions are included in the "Most Stringent NO<sub>x</sub>" scenario, it becomes clear that Utah's BART Alternative does not result in greater emissions reductions, or greater reasonable progress, than would installation of SCR BART controls on the Hunter and Huntington BART units.

c. Properly Calculated, Emissions Reductions Achievable through Utah's Regional Haze SIP are Less than Reductions Achievable through BART

When emissions reductions are properly calculated, the BART Benchmark is demonstrably superior to Utah's BART Alternative. Based on the comments in Vicki Stamper's March 14, 2016 TSD (pp. 43-58), below are tables of revised projections of emission reductions from the shutdown of the Carbon units under the BART Benchmark and under the BART Alternative. These tables are revisions to the data presented by EPA in Table 3 of its proposed rulemaking on the Utah SIP.<sup>134</sup> No changes to emissions for other emission units are reflected in these revised tables.

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<sup>134</sup> 81 Fed. Reg. at 2,015, Table 3 (Jan. 14, 2016).

**Table 4. Revised Estimated Emissions Under BART Benchmark and BART Alternative, Based on 2001-2003 SO<sub>2</sub> and NO<sub>x</sub> Emissions and Revised Filterable PM<sub>10</sub> Emissions for the Carbon Units.**

Units	NO <sub>x</sub> Emissions (tpy)		SO <sub>2</sub> Emissions (tpy)		Filterable PM <sub>10</sub> Emissions (tpy)		Combined	
	Bench- mark	Alter- native	Bench- mark	Alter- native	Bench- mark	Alter- native	Bench- mark	Alter- native
Carbon 1	1,312	0	2,286	0	185	0	9,288	0
Carbon 2	1,977	0	3,528	0				
Hunter 1	775	3,412	1,529	1,529	169	169	2,473	5,110
Hunter 2	843	3,412	1,529	1,529	169	169	2,541	5,110
Hunter 3	6,530	4,622	1,033	1,033	122	122	7,685	5,777
Huntington 1	809	3,593	1,168	1,168	176	176	2,153	4,937
Huntington 2	856	3,844	1,187	1,187	200	200	2,243	5,231
<i>Total</i>	<i>13,102</i>	<i>18,883</i>	<i>12,260</i>	<i>6,446</i>	<i>1021</i>	<i>836</i>	<i>26,383</i>	<i>26,165</i>

As the revisions to EPA's Table 3 presented in the table above demonstrate (Table 20 in the 2016 Stamper TSD), the use of Carbon plant actual emissions over the baseline date of the regional haze plan (i.e., 2001-2003 annual average) shows that the BART Benchmark would result in 5,781 tpy ADDITIONAL NO<sub>x</sub>, emissions reductions compared to the BART Alternative. However, the BART Alternative would provide for a 5,814 tpy **reduction** in SO<sub>2</sub> emissions over the BART Benchmark. And the BART Alternative would provide for a 185 tpy **reduction** in filterable PM<sub>10</sub> than the BART Benchmark.

The total of SO<sub>2</sub> + NO<sub>x</sub> + PM<sub>10</sub> emissions for the BART Benchmark is 218 tpy greater than the total of SO<sub>2</sub> + NO<sub>x</sub> + PM<sub>10</sub> emissions for the BART Alternative. Put another way, in total, the BART Alternative would result in a 0.8% reduction in total emissions of SO<sub>2</sub>+NO<sub>x</sub>+PM<sub>10</sub> from the Carbon, Hunter, and Huntington units compared to the BART Benchmark. The above table is a more appropriate analysis of emissions changes at the Carbon units based on the 2002 baseline date of the SIP.

By using emissions for the Carbon units over the 2012 -2013 timeframe in its comparison of emission reductions achievable under the BART Benchmark compared to the BART Alternative, Utah is not meeting the requirements of 40 C.F.R. §51.308(e)(2)(iv) that emission reductions resulting from the BART alternative "will be surplus to those reductions resulting from measures adopted to meet requirements of the CAA as of the baseline date of the SIP." EPA has explained that the "baseline date of the SIP" in this context means "the date of the emissions inventories on which the SIP relies" which is "defined as 2002 for regional haze purposes."<sup>135</sup> As discussed Section I.B.1. of the 2016 Stamper TSD, the Carbon units had been burning relatively higher sulfur coal in the 2010-2014 timeframe than the coal sulfur content historically utilized at the plant. That increased sulfur content resulted in an increase in SO<sub>2</sub> emissions above the 2002 emission inventories upon which the Utah regional haze SIP is based.

<sup>135</sup> See 77 Fed. Reg. 39,938, 39,941 (July 6, 2012), quoting EPA's 1999 Regional Haze Rulemaking and EPA's BART Guidelines rulemaking at 64 Fed. Reg. 35,742 (July 1, 1999) and 70 Fed. Reg. 39,143 (July 6, 2005).

Utah should not be allowed emissions reduction credit for the shutdown of the Carbon units at emission levels that exceeded the emissions as of the 2002 baseline date of the regional haze plan. That would allow Utah to take credit for SO<sub>2</sub> emission increases at the Carbon plant above the 2002 baseline for the regional haze plan emission inventory, and such emission reductions at a level that exceed the 2002 baseline emission inventory cannot be considered surplus.

Further, under the BART Benchmark scenario, it is assumed that the Carbon units would continue operation while Hunter Units 1 and 2 and Huntington Units 1 and 2 installed SCR to meet NO<sub>x</sub> BART. However, the Carbon units could not operate past April 2015 without complying with MATS. Assuming the Carbon units complied with the SO<sub>2</sub> surrogate limit of 0.20 lb/MMBtu for the acid gas HAPs<sup>136</sup>, the SO<sub>2</sub> emissions from the Carbon units under the BART Benchmark scenario would be much lower as shown in the table below (Table 21 to the 2016 Stamper TSD).

**Table 5. Revised Estimated Emissions Under BART Benchmark and BART Alternative, Based on MATS Compliance for Acid Gas HAPS (Using SO<sub>2</sub> Surrogate Limit), 2001-2003 NO<sub>x</sub> Emissions, and Revised Filterable PM<sub>10</sub> Emissions for Carbon Plant.**

Units	NO <sub>x</sub> Emissions (tpy)		SO <sub>2</sub> Emissions (tpy)		Filterable PM <sub>10</sub> Emissions (tpy)		Combined	
	Bench-mark	Alter-native	Bench-mark	Alter-native	Bench-mark	Alter-native	Bench-mark	Alter-native
Carbon 1	1,312	0	594	0	185	0	4,969	0
Carbon 2	1,977	0	901	0				
Hunter 1	775	3,412	1,529	1,529	169	169	2,473	5,110
Hunter 2	843	3,412	1,529	1,529	169	169	2,541	5,110
Hunter 3	6,530	4,622	1,033	1,033	122	122	7,685	5,777
Huntington 1	809	3,593	1,168	1,168	176	176	2,153	4,937
Huntington 2	856	3,844	1,187	1,187	200	200	2,243	5,231
<i>Total</i>	<i>13,102</i>	<i>18,883</i>	<i>7,941</i>	<i>6,446</i>	<i>1021</i>	<i>836</i>	<i>22,064</i>	<i>26,165</i>

The table above represents a more realistic BART Benchmark scenario for the Carbon plant, because the Carbon units could not operate past April 15, 2015 without complying with the MATS rule. As the table demonstrates, a comparison of emissions under these two scenarios shows that the BART Alternative (with MATS compliance) would result in a 1,495 tpy reduction in SO<sub>2</sub> from the Carbon units. But the total emissions of SO<sub>2</sub> + NO<sub>x</sub> + filterable PM<sub>10</sub> under the BART Benchmark scenario would be 4,101 tpy LOWER than the total emissions of these three pollutants under the BART alternative. As such, Utah's BART Alternative does not satisfy the "emission reduction" test.

<sup>136</sup> 40 C.F.R. Part 63, Subpart UUUUU, Table 2.



2. Utah's BART Alternative Does Not Yield Greater Visibility Improvement Than Would BART

Utah's BART Alternative also fails to yield greater visibility benefits than would adequate implementation of BART to control NO<sub>x</sub> emissions from Hunter and Huntington Units 1 and 2.<sup>137</sup> Under this test, visibility modeling "for the worst and best 20 percent of days" may be used to "demonstrate 'greater reasonable progress' if both of the following two criteria are met: (i) Visibility does not decline in any Class I area, and (ii) There is an overall improvement in visibility, determined by comparing the average differences between BART and the alternative over all affected Class I areas."<sup>138</sup> As an initial matter, Utah failed to conduct appropriate dispersion modeling to predict visibility impacts on "worst and best 20 percent of days," and instead relied solely on CALPUFF modeling that is not able to depict such impacts.<sup>139</sup> In any event, even Utah's own modeling and emissions assumptions demonstrate that BART achieves greater visibility improvement than Utah's BART Alternative. When Utah's flawed modeling and emissions assumptions are corrected, the superiority of BART is stark. Under either scenario, Utah's BART Alternative cannot be approved under 40 C.F.R. § 51.308(e)(3).

a. Utah's Own Modeling Demonstrates the Inferiority of the BART Alternative Using the Most Widely Accepted Visibility Metric

In rendering a decision on its co-proposal, EPA must place a heavy reliance on consistent application of the 98<sup>th</sup> percentile metric, which demonstrates the superiority of BART. As noted in EPA's Proposed Rule, "[t]he 98<sup>th</sup> percentile visibility impact is a key metric recommended by the BART Guidelines when selecting BART controls. In addition, this is one of the primary metrics that EPA has relied on in evaluating prior regional haze actions that have included BART alternatives."<sup>140</sup> The 98<sup>th</sup> percentile metric requires reliance on the 8<sup>th</sup> highest impacted day, typically averaged over 3 modeled years, for assessing visibility improvement.<sup>141</sup> Under Utah's own analysis, the BART Benchmark shows greater visibility improvement than the BART Alternative when assessed against the 98<sup>th</sup> percentile metric. As noted in EPA's Proposed Rule, Utah's modeling demonstrates that "the BART Benchmark would result in greater visibility improvement at five of the nine Class I areas, and is slightly better on average across all nine Class I areas (0.11 dv difference)."<sup>142</sup>

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<sup>137</sup> 40 C.F.R. § 51.308(e)(3).

<sup>138</sup> *Id.*

<sup>139</sup> *See* 2016 Gray Modeling Report, at 6.

<sup>140</sup> 81 Fed. Reg. at 2,022.

<sup>141</sup> *Id.*

<sup>142</sup> *Id.*

Further, Table 12 of EPA's Proposed Rule contains EPA's corrected 98<sup>th</sup> percentile analysis.<sup>143</sup> Table 12 clearly shows that seven of the nine Class I areas experience greater average visibility improvement under the BART Benchmark when judged by the 98<sup>th</sup> percentile metric and based on the consistent meteorological years of 2001-2003. EPA's correction is appropriate and necessary because otherwise the differences between scenarios may be due simply to meteorological differences rather than differences in emissions.

With EPA's correction, the BART Benchmark improves visibility in Canyonlands by 0.78 dv and in Capitol Reef by 0.59 dv, while the greatest degree of visibility improvement under the BART Alternative is 0.21dv at Arches. Canyonlands, the Class I area most impacted by Utah BART sources, experiences nearly a four-times greater degree of visibility improvement under the BART Benchmark than it does under the BART Alternative. Moreover, the BART Benchmark also provides a greater average degree of visibility improvement (0.14 dv) over the BART Alternative across all Class I areas when judged by the 98<sup>th</sup> percentile metric.<sup>144</sup> As such, Utah has failed to meet its heavy burden of proving by the clear weight of evidence that its BART Alternative results in greater visibility improvement than would BART when judged by a consistent application of the 98<sup>th</sup> percentile metric.

EPA has consistently relied on the 98<sup>th</sup> percentile metric in evaluating other BART alternatives and must likewise do so here. EPA's Proposed Rule identifies four other rulemakings in which the 98<sup>th</sup> percentile metric was the "primary metric[] that EPA has relied on in evaluating prior regional haze actions that have included BART alternatives", namely the Tesoro Refining, Arizona Apache, Four Corners Power Plant, and Amalgamated Sugar.<sup>145</sup> When comparing these other BART Alternatives with Utah's BART Alternative, the Arizona Apache BART alternative is most instructive. Like Utah's BART Alternative, the Arizona Apache case involved a scenario where "the BART Alternative will result in ...fewer SO<sub>2</sub> emissions compared to BART...[but] more NO<sub>x</sub> emissions...compared to BART..."<sup>146</sup> In Arizona, EPA gave "the most weight to the visibility impacts based on air quality modeling."<sup>147</sup> In doing so, EPA used the "98<sup>th</sup> percentile impacts (average across three years [2001-2003]), consistent with

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<sup>143</sup> *Id.* at 2,023. EPA correctly found that Utah's 98<sup>th</sup> percentile methodology "may introduce error" because Utah did not employ consistent meteorological years in its visibility modeling. *Id.* EPA eliminated this error in Table 12 by assessing visibility improvement using the consistent meteorological years of 2001-2003. Utah's inconsistent methodology must be discounted when choosing between EPA's co-proposals.

<sup>144</sup> The Conservation Organizations maintain that in order to be considered better than BART, a BART alternative should provide greater reasonable progress as shown by the 98<sup>th</sup> percentile visibility improvement at each individual Class I area modeled—a standard that Utah's BART Alternative does not meet. Nonetheless, because EPA has typically relied on the average 98<sup>th</sup> percentile visibility improvement across all Class I areas to compare BART, that is the metric we discuss here.

<sup>145</sup> 81 Fed. Reg. at 2,022 n 90.

<sup>146</sup> 79 Fed. Reg. 56,328.

<sup>147</sup> *Id.*

the approach recommended by the BART Guidelines for comparing control alternatives at a single source.”<sup>148</sup> In Arizona EPA “compared the average differences between BART and the Apache BART Alternative over all affected Class I areas to ensure that there is an overall improvement in visibility. The Apache BART Alternative also meets this prong, as the modeling results indicated that the Alternative would result in improved visibility, on average, across all Class I areas, compared with BART.”<sup>149</sup>

Although EPA employed a similar methodology in Arizona, the results in Utah stand in stark contrast because the EPA’s Utah analysis proves that the BART Benchmark, not the BART Alternative, would result in improved visibility, on average, across all Class I areas by 0.14 dv.<sup>150</sup> EPA’s Arizona methodology is most similar to EPA’s Utah methodology because it utilizes consistent meteorological years between scenarios (in that case, 2001-2003) and evaluates average visibility improvement over all Class I areas. Accordingly, EPA may not approve Utah’s BART Alternative and at the same time remain consistent with its employed methodology for a nearly identical BART Alternative in Arizona.

EPA performed another similar 98<sup>th</sup> percentile modeling analysis for the BART Alternative at the Four Corners Power Plant located on the Navajo Nation.<sup>151</sup> In this analysis, EPA consistently used the meteorological years of 2001-2003, but did not conduct an averaging analysis per se. Instead, EPA calculated the functionally equivalent metric of the total delta deciview of all 16 affected Class I areas.<sup>152</sup> EPA’s Four Corners 98th percentile analysis showed that the BART alternative provided greater delta deciview improvement at each and every 16 Class I area when compared to EPA’s BART determination.<sup>153</sup> This contrasts with the Utah BART Alternative that failed to establish visibility improvement at a majority of affected Class I areas.

EPA’s also heavily relied on a similar 98<sup>th</sup> percentile analysis for the Tesoro BART alternative.<sup>154</sup> It again used consistent meteorological years (in that case, 2003-2005). EPA’s does not explicitly calculate the average across all Class I areas in the Tesoro analysis; however, the average clearly favors the Tesoro BART alternative because the Tesoro BART alternative resulted in greater visibility improvement at each and every affected Class I area.<sup>155</sup> The Tesoro

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<sup>148</sup> *Id.*

<sup>149</sup> *Id.*

<sup>150</sup> 81 Fed. Reg. at 2,023 (Table 12).

<sup>151</sup> Supplemental Proposed Rule, Best Available Retrofit Technology for Four Corners Power Plant: Navajo Nation, 76 Fed. Reg. 10,530, 10,540 (Table 10) (Feb. 25, 2011).

<sup>152</sup> The average value is simply the total divided by the number of Class I areas; they are different ways of representing the same information and will lead to the same conclusion.

<sup>153</sup> *Id.*

<sup>154</sup> Proposed Rule, Washington Regional Haze (Alcoa Wenatchee), 78 Fed. Reg. 79,344, 79,355 (Table 3) (Dec. 30, 2013).

<sup>155</sup> *Id.*

modeling results stand in stark contract to EPA's Utah results, where EPA's 98<sup>th</sup> percentile analysis for Utah shows that the BART Alternative only achieves greater visibility benefits in 2 of 9 affected Class I areas.

The Tesoro methodology was nearly replicated in EPA's Idaho Amalgamated Sugar analysis.<sup>156</sup> Again, EPA relied on consistent meteorological years (2003-2005). Though it did not explicitly average across all Class I areas, EPA did implicitly consider this information in noting the cumulative or "overall greater progress towards achieving natural conditions under the BART Alternative."<sup>157</sup> EPA's 98<sup>th</sup> percentile modeling results in Idaho also stands in stark contrast to Utah because the Amalgamated Sugar BART alternative resulted in visibility improvement at 6 of 7 affected Class I areas.

Additionally, the 98<sup>th</sup> percentile is the main metric used in the vast majority of EPA's single-source, non-alternative BART determinations. It is appropriate and logical for BART alternatives to be compared to BART by the use of the same metric that typically is used to evaluate BART.

In summary, the 98<sup>th</sup> percentile analysis by both Utah and EPA show that the BART Benchmark provides greater visibility improvement than does Utah's BART Alternative. As shown above, EPA has relied on the 98<sup>th</sup> percentile metric when evaluating other BART alternative proposals, and any approval Utah's BART Alternative would be inconsistent with these prior determinations.<sup>158</sup>

b. Using Corrected Emissions Scenarios, BART is Vastly Superior to Utah's BART Alternative

As discussed above Utah's own modeling demonstrates the superiority of BART based on the key 98<sup>th</sup> percentile metric. BART's greater visibility benefits are even more substantial when the erroneous modeling assumptions upon which Utah relied are corrected to reflect realistic future emissions from the Carbon Plant if it were to continue operating. The modeling demonstrates that Utah's BART Alternative not only fails to achieve "greater reasonable progress" than BART, but also that the Alternative would cause visibility to *decline* in violation of 40 C.F.R. § 51.308(e)(3)(i).

The Conservation Organizations employed the services of professional air quality dispersion modeler Dr. Andrew Gray to assess whether the corrected BART scenario would achieve greater reasonable progress than would Utah's BART Alternative. Dr. Gray's visibility modeling largely used the same emissions inputs as Utah. The only major difference between Dr. Gray's modeling and Utah's was the SO<sub>2</sub> emissions inputs for Carbon Units 1 and 2. Instead

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<sup>156</sup> 78 Fed. Reg. 38,872.

<sup>157</sup> *Id.* at 38,876.

<sup>158</sup> As discussed below in Part V.B.2, Utah's other visibility metrics are improper and, in any event, fail to demonstrate that Utah's BART Alternative will achieve "greater reasonable progress" than would be achieved through BART.

of adopting Utah's assumption of uncontrolled SO<sub>2</sub> emissions from these units into the future in the Most Stringent NO<sub>x</sub> scenario, Dr. Gray used SO<sub>2</sub> emissions that reflected: 1) the median of the maximum daily SO<sub>2</sub> emissions, 2001-2014 ("Corrected SO<sub>2</sub> BART Benchmark scenario"); and 2) compliance with MATS (MATS#1 and MATS#2 scenarios).<sup>159</sup> The only difference between the two MATS compliance scenarios run by Dr. Gray is that the MATS#1 scenario allows for a NO<sub>x</sub> emissions reduction credit at Hunter 3 resulting from installation of LNB in 2008. In contrast, the MATS#2 does give not credit for these NO<sub>x</sub> emissions reductions.<sup>160</sup>

Dr. Gray's modeling results clearly show that Utah's BART Alternative will not achieve greater reasonable progress than would operation of SCR. Under the Corrected SO<sub>2</sub> BART scenario, reflecting more accurate historical Carbon SO<sub>2</sub> emissions, BART yields markedly lower peak visibility impacts than the Alternative scenario. At Canyonlands NP and Capitol Reef NP, the model results show that the Alternative scenario would result in peak visibility impacts that are at least 0.82 and 0.67 dv higher, for the two Class I areas respectively, than for the Corrected SO<sub>2</sub> BART Benchmark scenario.<sup>161</sup> The average visibility impacts under the Corrected SO<sub>2</sub> BART scenario are similarly lower than under the BART Alternative.<sup>162</sup> Utah's reliance on uncharacteristically high SO<sub>2</sub> emissions from the Carbon Plant in 2012-2013 thus skewed the better-than-BART analysis. Modeling based on more realistic historical SO<sub>2</sub> emissions for the BART scenario demonstrates BART's greater visibility benefits than the BART Alternative.

Dr. Gray's modeling of a corrected BART scenario reflecting MATS compliance at the Carbon Plant showed even more dramatically the superiority of BART. Dr. Gray's results are presented in Table 3 of his December 22, 2014 report, which is reproduced below.<sup>163</sup>

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<sup>159</sup> 2016 Gray Modeling Report, at 3-4, 23-36; April 30, 2015 Gray Modeling Report attached hereto as Exhibit 14. The Conservation Organizations maintain that it is improper for Utah to have relied on any sulfur dioxide emission reductions whatsoever in accounting for the emission reductions or visibility benefits of its proposed BART alternative. However, we provide analyses which include the proposed SO<sub>2</sub> reductions as further justification that under no circumstance does this BART alternative outperform NO<sub>x</sub> BART or satisfy the BART alternative provisions.

<sup>160</sup> Exhibit 14, April 30, 2015 Gray Modeling Report, at 2.

<sup>161</sup> 2016 Gray Modeling Report, at 25 (Table 14).

<sup>162</sup> *Id.* at 25 (Table 13).

<sup>163</sup> *See also* 2016 Gray Modeling Report, at 29-31 (Tables 18-24).

**Table 6. Summary of Visibility Impacts**

<b>All 9 Class I Areas</b>	<b>Utah's Alternative</b>	<b>Utah's Most Stringent NO<sub>x</sub></b>	<b>MATS#2</b>	<b>MATS#1</b>
# Days ≥ 0.5 dV impact	441	499	409	367
# Days ≥ 1.0 dV impact	258	264	217	186
Avg 98th percentile delta-dV	2.39	2.25	1.93	1.69
Avg delta-dV All Days	0.28	0.29	0.23	0.20
3-yr 98 <sup>th</sup> percentile (24th high)	2.33	2.18	1.88	1.63
3-yr 90th percentile (110th high)	0.81	0.82	0.69	0.60

In evaluating these results, Dr. Gray concluded that Utah's BART Alternative scenario will result in significantly greater visibility impairment at every modeled Class I area for every metric used. In fact, Utah's BART Alternative scenario would result in 36 to 44 percent greater average visibility impairment than the MATS#1 scenario at the nine modeled Class I areas, depending on which metric is used (excluding the number of days in which delta-dV is greater than 0.5, which would increase from 367 in the MATS#1 scenario to 441 under the BART Alternative).<sup>164</sup> Also, if the SO<sub>2</sub> emissions reductions at the Carbon facility due to MATS are considered, then either BART strategy (MATS#1 or MATS#2) would result in far fewer days with delta-dV greater than 1.0 (186 days for MATS#1 or 217 days for MATS#2) than would Utah's BART Alternative (258 days).<sup>165</sup>

Appendices A-D of Dr. Gray's December 2014 and April 2015 reports contains figures and tables similar to those presented in Utah's summary report, and include the modeling results for the two MATS scenarios as well as Utah's Most Stringent NO<sub>x</sub> and Alternative scenarios.<sup>166</sup> Appendix B-D to Dr. Gray's 2014 report contains figures showing the top 15 modeled 24-hour average delta-dV for the two MATS scenarios for each year and at each Class I area. For comparison, the highest, 5<sup>th</sup> high, 8<sup>th</sup> high (98<sup>th</sup> percentile), 10<sup>th</sup> high, and 15<sup>th</sup> high delta-dV for each year are also shown for Utah's Alternative scenario. In evaluating each of Utah's metrics, Dr. Gray concludes that, "[e]xamination of ALL the visibility metrics leads to the same conclusion: Utah's 'Alternative to BART' strategy would result in significantly greater visibility impairment in ALL modeled Class I areas than BART (MATS#1 or MATS#2). Visibility conditions would decline in Class I areas if the Utah's BART Alternative scenario is adopted over either the MATS compliance scenario #1 or MATS compliance scenario #2, which are more realistic representations of BART than the Most Stringent NO<sub>x</sub> scenario."<sup>167</sup>

<sup>164</sup> April 30, 2015 Gray Modeling Report, at 7 (Exhibit 14 hereto)

<sup>165</sup> *Id.*

<sup>166</sup> The model results for the Alternative and Most Stringent NO<sub>x</sub> scenarios that appear in Appendices A-D to the December 22, 2014 and April 30, 2015 Gray Modeling Reports are from Appendices A-D of the UDAQ visibility modeling summary report.

<sup>167</sup> April 30, 2015 Gray Modeling Report, at 7; *see also* 2016 Gray Modeling Report, at 19.

## **B. Utah's BART Alternative Does Not Achieve Greater Reasonable Progress Based on the "Clear Weight of Evidence"**

Utah's Regional Haze SIP also must be rejected under 40 C.F.R. § 51.308(e)(2)(i)(E) because it does not achieve "greater reasonable progress" based on the "clear weight of evidence."<sup>168</sup>

At the outset, Utah's proposed reliance on the "clear weight of evidence" test is improper. In promulgating regulations allowing for the test, 40 C.F.R. § 51.308(e)(2)(i)(E), offered the following example of when the test might be appropriate: "(1) The alternative program achieves emissions reductions that are within the range believed achievable from source-by-source BART at affected sources, (2) the program imposes a firm cap on emissions that represents meaningful reductions from current levels and, in contrast to BART, would prevent emissions growth from new sources, and (3) the State is unable to perform a sufficiently robust assessment of the programs using the two pronged visibility test due to technical or data limitations."<sup>169</sup> None of those conditions is met here. Most importantly, Utah's BART Alternative does not drive any meaningful reductions from "current levels" and does not prevent emissions growth from new sources, and Utah is not hindered by any technical or data limitations preventing a sufficiently robust visibility assessment. EPA further noted that "a weight of evidence comparison may be warranted" "when there is confidence that the difference in visibility impacts between BART and the alternative scenarios are expected to be large enough."<sup>170</sup> Here, as EPA correctly observed, even Utah's flawed modeling demonstrated the superiority of BART using the most relevant visibility metric and only minimal benefits of the BART Alternative and compared with BART using other metrics. Accordingly, the Utah BART Alternative does not present circumstances warranting application of a "clear weight of evidence" test.

Moreover, even applying that test, Utah's BART Alternative is not better than BART. In support of its "clear weight of evidence" determination, Utah relied on the marginally greater visibility improvement of the BART Alternative under metrics *other than* the accepted 98<sup>th</sup> percentile metric, monitoring data that Utah claims undermines visibility modeling results, and the early timing of emissions controls under the BART Alternative.<sup>171</sup> As discussed below, none of these factors supports a determination that the BART Alternative will achieve greater reasonable progress, while other factors definitively demonstrate the superiority of BART.

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<sup>168</sup> 40 C.F.R. § 51.308(e)(2)(i)(E).

<sup>169</sup> Final Rule, Revisions to Provisions Governing Alternative to Source-Specific Best Available Retrofit Technology (BART) Determinations, 71 Fed. Reg. 60,612, 60,621 (Oct. 13, 2006).

<sup>170</sup> *Id.* at 60,622.

<sup>171</sup> *See* 81 Fed. Reg. at 2,024 (summarizing "weight of evidence" considerations).

1. Utah's Reliance on Purportedly Greater Emissions Reductions Under the BART Alternative is Improper

Utah first relies on the purportedly greater emissions reductions under the BART Alternative than under BART for its “clear weight of evidence” demonstration.<sup>172</sup> Just as EPA found this test inapplicable for Utah’s BART Alternative under 40 C.F.R. § 51.308(e)(3), it is inapplicable under the “clear weight of evidence” test of § 51.308(e)(2)(i)(E).<sup>173</sup> Utah’s comparison is also erroneous. Properly calculated to account for actual emissions reductions under the BART scenario, Utah’s BART Alternative does not achieve greater emissions reductions than BART even if a multi-pollutant comparison were appropriate.<sup>174</sup>

2. Visibility Metrics Other Than the 98<sup>th</sup> Percentile Metric are Unconvincing and Improperly Calculated

EPA must reject Utah’s “greater reasonable progress” evaluation that improperly dismisses the 98<sup>th</sup> percentile visibility impacts, which demonstrates the superiority of BART, and relies instead on marginal purported benefits of the BART Alternative based on less-relevant metrics. Furthermore, when all of Utah’s visibility metrics are considered using appropriate SO<sub>2</sub> emissions inputs for the Carbon Plant, they definitively demonstrate that Utah’s BART Alternative is not better than BART.

As Utah’s own modeling demonstrates, the 98<sup>th</sup> percentile metric that has been most widely used and accepted in the BART context demonstrates the superiority of BART over Utah’s BART Alternative.<sup>175</sup> While this is true even using Utah’s flawed emissions assumptions,<sup>176</sup> it is particularly stark when those emissions assumptions are corrected to reflect more realistic future SO<sub>2</sub> emissions from the Carbon Plant under the BART scenario, as described above.<sup>177</sup>

Seeking to dismiss the visibility benefits of BART using the 98<sup>th</sup> percentile metric, which represent maximum visibility impacts at Class I areas, Utah relies on a number of visibility metrics that are inferior because they mask maximum impacts, at best show marginal benefits of the BART Alternative on low-impact days, and in any event are improperly calculated. In particular, EPA discusses Utah’s reliance on the purported improvement in the number of days with significant visibility impairment under the BART Alternative, annual average visibility impacts, and 90<sup>th</sup> percentile impacts. All are improper.

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<sup>172</sup> See *id.* at 2,028-29.

<sup>173</sup> *Id.* at 2,029.

<sup>174</sup> See *supra* Part V.A.3.

<sup>175</sup> See also *supra*, Part V.A.2.a.

<sup>176</sup> 81 Fed. Reg. at 2,030.

<sup>177</sup> See *supra*, Part V.A.2.b.



First, as described in Dr. Gray's report, the CALPUFF visibility model is designed to predict maximum visibility impacts, and its results cannot be meaningfully interpreted to estimate impacts lower on the distribution scale, including average impacts.<sup>178</sup> EPA properly acknowledged this dynamic when it stated that averaging the number of days with greater than 1.0 dv impacts across all affected Class I areas is not proper, because it both obscures impacts at specific Class I areas and is not indicative of the magnitude of impacts at any single Class I area or on average.<sup>179</sup> The same holds true for the 90<sup>th</sup> percentile metric. As Dr. Gray explains, under EPA's modeling protocol, CALPUFF modeling is to be performed using maximum daily emission rates to determine the maximum potential impacts due to the modeled source.<sup>180</sup> The 98<sup>th</sup> percentile impact is typically used to represent maximum visibility impacts, i.e., impacts on the "worst" days. However, as Dr. Gray explains, "the bottom part of the CALPUFF-derived distribution does not provide much useful information regarding the impacts from the modeled source(s) on the 'best' days."<sup>181</sup> This is because the lower end of the distribution includes days on which the visibility impact from any single source at a particular Class I area will be negligible due to wind or meteorological conditions.<sup>182</sup> Modeled visibility impacts on these days tell us very little about the contribution of the individual source. Further, Utah's reliance on the number of days with visibility impairment above identified thresholds (0.5 and 1.0 dv) also fails to support Utah's better-than-BART finding because it does not provide any indication of the *magnitude* of impacts on these days and does not depict peak impacts.<sup>183</sup>

Utah's reliance on visibility metrics other than the 98<sup>th</sup> percentile impacts also is unfounded because, as EPA recognized, they demonstrate negligible differences between the BART Alternative and BART Benchmark scenarios. EPA correctly noted that Utah's modeling results show that the BART Alternative would result in more days with impacts greater than 1.0 dv at seven of the nine modeled Class I areas, while only two Class I areas would have fewer days exceeding 1.0 dv impacts under the BART Alternative as compared with the BART Benchmark scenario.<sup>184</sup> Utah's modeling did not show any meaningful difference between the BART Alternative and BART Benchmark scenario at most Class I areas with respect to the average number of days with impacts greater than 1.0 dv.<sup>185</sup> Accordingly, metrics based on the number of days exceeding identified thresholds are not indicative of the BART Alternative's superiority under the "clear weight of evidence" test. Similarly, EPA must reject Utah's reliance on annual average visibility impacts and the 90<sup>th</sup> percentile impacts in its "clear weight of

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<sup>178</sup> Gray Modeling Report, at 5, 7-9.

<sup>179</sup> 81 Fed. Reg. at 2,030.

<sup>180</sup> Gray Modeling Report, at 7-9.

<sup>181</sup> *Id.* at 5.

<sup>182</sup> *Id.*

<sup>183</sup> *See* Gray Modeling Report, at 7-8.

<sup>184</sup> 81 Fed. Reg. at 2,029.

<sup>185</sup> *Id.*

evidence” evaluation as both metrics demonstrate largely equivalent benefits of the BART Alternative and BART Benchmark scenarios.<sup>186</sup>

Moreover, Utah’s erroneous assumptions about future Carbon SO<sub>2</sub> emissions undermine Utah’s conclusions under all visibility metrics, because more realistic assumptions demonstrate the superiority of BART. Dr. Gray’s modeling demonstrates that modeled comparisons of the Alternative plan and the BART Benchmark are very sensitive to the assumed baseline SO<sub>2</sub> emission rate for the Carbon facility.<sup>187</sup> As discussed above, Utah’s modeled emissions for the two Carbon units under the BART scenario were based on recent emission data for which the SO<sub>2</sub> emissions were much higher than during many previous recent periods when lower sulfur coal was primarily being used at the facility. Dr. Gray demonstrates that if the SO<sub>2</sub> emission rates from the Carbon Plant are overestimated by even a modest amount, then the comparison of the Alternative scenario to the BART Benchmark will produce quite different conclusions regarding the merits of each scenario, as demonstrated below. Including a relatively small “correction” in the assumed baseline SO<sub>2</sub> emission rates for the two Carbon units results in an unambiguous determination that the BART scenario would achieve greater reasonable progress than Utah’s BART Alternative. The Conservation Organizations believe that EPA must rely on visibility modeling that employs reasonable assumptions about the Carbon Plant’s SO<sub>2</sub> emissions under the BART scenario, which demonstrate BART’s clear superiority. At a minimum, however, uncertainty regarding appropriate baseline emissions for the Carbon Plant, combined with the model’s sensitivity and negligible differences in Utah’s modeling comparison between BART and Utah’s BART Alternative should preclude any finding that the “clear weight of evidence” favors Utah’s BART Alternative.<sup>188</sup>

### 3. EPA Must Reject Utah’s Inappropriate and Unconvincing Reliance on Monitoring and Park Visitation Data

Utah seeks to undermine the visibility modeling evidence that favors the BART Benchmark over the BART Alternative using monitoring results from Canyonlands National Park and visitor use statistics at affected Class I areas.<sup>189</sup> Neither effort has merit. EPA proposes to agree with part of the first argument and to disagree with the second;<sup>190</sup> it must disagree with both. The use of monitoring data is inappropriate in the BART context and inconsistent with both EPA’s actions elsewhere and the purpose and requirements of the Regional Haze Rule. Even if monitoring information were appropriate to consider, it does not support the conclusion that the BART Alternative provides greater reasonable progress than BART. Neither the monitoring data nor the seasonal use information should be used to dismiss or minimize the modeling results as part of a demonstration under either 40 C.F.R. § 51.308(e)(2)(i)(E) or § 51.308(e)(3).

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<sup>186</sup> *Id.* at 2,030

<sup>187</sup> *See* Gray Modeling Report, at 4, 22.

<sup>188</sup> *See id.* at 4, 27.

<sup>189</sup> 81 Fed. Reg. at 2,023

<sup>190</sup> *Id.* at 2,023, 2,024

a. Monitoring Data is Inappropriate to Use in the BART Context, Including a Weight of Evidence Demonstration

EPA must reject Utah's proposed reliance on monitoring data as evidence of "greater reasonable progress" for several reasons.

*First*, BART is a source-specific demonstration that looks at the impacts from the specific source(s) in question without regard to other, non-covered sources. This is true for evaluations of both single source BART determinations and BART alternatives dealing with more than one source. Monitoring of visibility impairment is not designed to isolate the impact from any single source or set of sources. It is difficult, if not impossible in most cases, to tell based on monitoring data alone whether pollutant increases or decreases are caused by emissions from any small subset of sources. Thus, while Utah implies that reductions in NO<sub>x</sub> from Hunter, Huntington, and area EGUs should be necessarily and clearly reflected in monitoring—and that if this is not the case, NO<sub>x</sub> reductions are somehow suspect or not valuable—there is no reason to expect that this will be the case. There are many variables, including emissions from other sources and meteorological variation that affect the monitoring results. It is therefore not appropriate to use monitoring, which reflects many sources besides those being evaluated, to counter or weigh against modeled benefits.<sup>191</sup>

*Second*, by design of the regional haze program and the BART Guidelines, the modeled benefits of pollution controls are based on a comparison to natural conditions, not current conditions; monitoring is inherently unable to provide this comparison. As EPA explained, "[t]he visibility goal of the CAA is both the remedying of existing impairment, and prevention of future impairment. ... Since the BART program is one component of that demonstration, visibility changes due to BART are appropriately measured against the target of natural conditions."<sup>192</sup> While modeled impacts are compared with natural conditions, monitoring demonstrates only current, impaired conditions. Visibility impairment is "non-linear," meaning that any single source's contribution to impairment is geometrically less the greater the impairment.<sup>193</sup> For that reason, the impact of the units in question will appear lower if they are evaluated in the context of other pollution sources.

This approach is necessary for evaluating BART, and it is also the appropriate method by which a BART alternative is judged. The regulations are clear on the point that BART visibility

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<sup>191</sup> We additionally note that modeling and monitoring conducted on different time scales and thus are not directly comparable. Modeling is evaluated on a daily basis, and in this context, the 98<sup>th</sup> percentile impact from the given source is typically reported. Visibility monitoring is typically conducted every third day and in this context, is measured in terms of the 20% worst and 20% best days with impacts from all sources.

<sup>192</sup> Final Rule, BART Guidelines, 70 Fed. Reg. at 39,124.

<sup>193</sup> *Id.*

modeling must be done against a natural background, and allow no justification for lesser levels of control on the basis of existing impairment, which is what monitoring reflects.<sup>194</sup>

*Third*, it is not clear that in promulgating the option to consider the weight of evidence, EPA intended to allow for the review of existing ambient conditions. The reference to monitoring in EPA's final rule comes in the form of the listing items that may be considered as part of a weight of evidence demonstration, including "future projected emissions levels under the program as compared to under BART, future projected visibility conditions under the two scenarios, the geographic distribution of sources likely to reduce or increase emissions under the program as compared to BART sources, *monitoring data and emissions inventories*, and sensitivity analyses of any models used."<sup>195</sup> Elsewhere in the text, EPA's references to monitoring exclusively refer to the source emissions monitoring data collected by continuous emissions monitors, rather than to ambient visibility monitoring. In this context, given that it is grouped with emissions inventories rather than listed as its own consideration, it is likely that EPA's intention was to consider emissions monitoring data, not visibility monitoring data. This reading is also most consistent with the program's design, as discussed above.

Accordingly, monitoring data is not appropriately considered as part of the BART Alternative evaluation. Even if it were, the discussion below illustrates the logistic difficulties with interpreting data that is not specific to the sources in question.

b. Monitoring Data is Not Evidence that the BART Alternative Provides Greater Reasonable Progress than BART

Assuming, *arguendo*, that monitoring data were relevant, the information presented by Utah and discussed by EPA does not lead to EPA's proposed finding that "these observations [about monitored conditions] suggest that the BART Alternative is likely to achieve greater reasonable progress."<sup>196</sup> The crux of the argument made by both Utah and EPA is that because SO<sub>2</sub> is the dominant visibility-impairing pollutant and present in all seasons, the SO<sub>2</sub> reductions in the BART Alternative are more important than the NO<sub>x</sub> reductions provided under BART. This conclusion is both speculative and irrelevant in this context. NO<sub>x</sub> reductions are significant to making reasonable progress at the affected Class I areas and cannot be dismissed.

EPA has asked for comment on both its conclusions and the information presented by Utah. The comments below speak to both the summary of Utah's submittal provided by EPA at 81 Fed. Reg. at 2,023 as well as Utah's submittal itself.

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<sup>194</sup> See also Final Rule, North Dakota Regional Haze, 77 Fed. Reg. 20,894, 20,912 (Apr. 6, 2012) (emphasis added); *North Dakota v. EPA*, 730 F.3d 750, 766 (8th Cir. 2013); Final Rule, Texas Regional Haze, 81 Fed. Reg. 296, 324 (Jan. 5, 2016).

<sup>195</sup> 71 Fed. Reg. at 60,622.

<sup>196</sup> 81 Fed. Reg. at 2,022.

One element of Utah and EPA's argument is that sulfate is the dominant anthropogenic contributor to visibility impairment at the affected Class I areas.<sup>197</sup> This argument is not relevant to whether or not the BART Alternative provides greater reasonable progress than BART. By statutory mandate, the regional haze program is designed to eliminate visibility impairment from any anthropogenic sources – regardless of the pollutant involved. A deciview of light extinction caused by sulfate is no different from a deciview of light extinction caused by nitrate; thus, the idea that sulfate provides a greater proportion of impairment generally does not negate the fact that nitrate also contributes to visibility impairment, and that nitrate reductions will provide visibility improvement.

A second element of Utah and EPA's arguments have to do with the seasonal formation of NOx. Although their approaches are different, both Utah and EPA imply that nitrate formation in non-winter months is not significant,<sup>198</sup> or that NOx reductions will not meaningfully reduce nitrates in non-winter months.<sup>199</sup> Both are untrue. Based on IMPROVE data, light extinction attributable to ammonium nitrate in non-winter months is roughly 20% of that attributable to ammonium sulfate. Despite the preferential formation of ammonium sulfate year round and higher ammonium nitrate formation in winter months, it is clear that significant levels of ammonium nitrate also form in non-winter months, and that these are likely to be lowered by reductions in NOx emissions. Furthermore, while EPA notes that wintertime conditions favor nitrate formation (versus non-winter),<sup>200</sup> this is accounted for in modeling and cannot be used to discount those results.

Based on a complicated and speculative interpretation of monitored data from Canyonlands National Park, Utah also argues that NOx reductions would lead to questionable benefits during the winter months. EPA rightly notes that Utah “does not provide any definitive conclusions,” and does not propose to agree with Utah, but it should also outright reject Utah's approach. The basis of Utah's argument is that while EGU SO2 reductions have been correlated with sulfate reductions throughout the year, EGU NOx reductions have only been correlated with nitrate reductions during non-winter months, and instead, increases in nitrate formation in winter months have been observed. On this basis, Utah asserts that reductions in NOx will be of questionable benefit during the winter.

Utah's theories lack quantitative detail and support. As to the question of whether ammonium nitrate values are rising in a relevant way during winter months, we note that Utah has not justified or explained its metrics in terms of time frame (e.g. starting with 1996 rather than the either the 1988 start date of measurements at Canyonlands or the 2000 state of the

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<sup>197</sup> 81 Fed. Reg. at 2,023, 2,024.

<sup>198</sup> UDAQ Staff Review, Exhibit 15 at 17. Winter months in this context are December, January, and February.

<sup>199</sup> 81 Fed. Reg. at 2,023 (EPA says that based on a computational model, “We propose to find that visibility benefits associated with NOx reductions are much more likely to occur in the winter months because this is when aerosol thermodynamics favors nitrate formation.”)

<sup>200</sup> 81 Fed. Reg. at 2,023.

baseline period for the regional haze plan)<sup>201</sup> or impacts and averaging periods. It provides no information about the significance of noted trends.

Utah also fails to review information from the other Class I areas that Hunter and Huntington impact. Our review of this data indicates that the suggested pattern is not necessarily replicated at all affected Class I areas.<sup>202</sup> For instance, Capitol Reef is impacted by Hunter and Huntington at similar levels to Canyonlands.<sup>203</sup> Notwithstanding other potentially appropriate metrics, reproducing Figure 6 for Capitol Reef demonstrates decreasing trends for nitrate, sulfate, and ammonium during both winter and the rest of the year.<sup>204</sup> In sum, Utah has not demonstrated that its evaluation of limited monitoring data invalidates the modeled benefits of NO<sub>x</sub> emissions reductions from Units 1 and 2 of both the Hunter and Huntington plants.

Assuming that ammonium nitrate contributions to winter visibility impairment at Canyonlands were rising in a meaningful way, one theory Utah presents is that the environment is ammonia-limited during the winter. However, there is little information on the actual levels of ambient ammonia or atmospheric dynamics near Canyonlands. In fact, the information relied on by Utah—though from a site in New Mexico—seems to show a trend of increasing ammonia.<sup>205</sup> If applicable to Canyonlands, Utah appears not to have evaluated the impact of potentially increasing ammonia in terms of nitrate trends.

In addition, Utah fails to explain why an ammonia-limited environment—if it is present—argues for fewer NO<sub>x</sub> emissions reductions rather than more. If it is true that ammonia, rather than ambient NO<sub>x</sub>, is currently limiting wintertime ammonium nitrate formation in Canyonlands, then there will be a fixed level of ammonium nitrate formation until either ammonia is reduced or NO<sub>x</sub> emissions are reduced to the point where NO<sub>x</sub> is the limiting factor. Thus, greater NO<sub>x</sub> emissions reductions may be necessary and justified to achieve the requisite visibility benefits. Because Utah has not adequately documented or quantified any of this, and therefore is operating on an unproven theory, EPA should reject it.

Furthermore, while Utah observes that efforts to decrease SO<sub>2</sub> emissions that cause impairment at Canyonlands may have had the paradoxical effect of increasing haze-causing ammonium nitrate, this result is unsurprising. Because ammonia reacts preferentially with SO<sub>2</sub> to form ammonium sulfate, decreasing SO<sub>2</sub> emissions creates an opportunity for greater ammonium nitrate formation. Utah cannot use this fact to excuse NO<sub>x</sub> emissions reductions.

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<sup>201</sup> One way in which this makes a difference is that earlier years (1988 – 1999), fewer measurements were taken per year than in later years (104-105 versus 121-122 in 2001-2013); thus, any relative measure, such as the third highest, may be representative of a different value.

<sup>202</sup> IMPROVE Daily Values Including Patched Values, 1988 – 2013, available at [http://vista.cira.colostate.edu/improve/Data/IMPROVE/summary\\_data.htm](http://vista.cira.colostate.edu/improve/Data/IMPROVE/summary_data.htm).

<sup>203</sup> See 2016 Gray Modeling Report, at 15 (table 5).

<sup>204</sup> UDAQ Staff Review, at 15.

<sup>205</sup> UDAQ Staff Review, at 17.

In fact, EPA recognized when it promulgated regulations governing BART-alternative programs that SO<sub>2</sub> emissions reductions alone are unlikely to achieve necessary visibility improvement. There, EPA stated “[i]n limited circumstances, it may be possible for a State to demonstrate that an alternative program which controls only emissions from SO<sub>2</sub> could achieve greater visibility improvement than application of source-specific BART controls on emissions of SO<sub>2</sub>, NO<sub>x</sub> and/or PM. [EPA] nevertheless believes that such a showing will be quite difficult to make in most geographic areas, given that controls on SO<sub>2</sub> emissions alone in most cases will result in increased formation of ammonium nitrate particles.”<sup>206</sup> Accordingly, EPA already has rejected Utah’s theory for avoiding further NO<sub>x</sub> emissions reductions by substituting SO<sub>2</sub> reductions.

Indeed, if Utah’s ammonia-limited theory is accurate, it would mean that benefits from SO<sub>2</sub> reductions would not be seen year round, as EPA proposes to find, because wintertime reductions in sulfate would lead to corresponding increases in nitrate.<sup>207</sup>

Utah also briefly evaluates the theory that NO<sub>x</sub> from other sources has increased and is the cause of rising ammonium nitrate contributions.<sup>208</sup> Again, a BART determination is not the appropriate place to consider existing conditions and contributions from other sources. We note that the generalized discussion of emissions sources fails to account for proximity to the affected Class I area, differences between area sources and point sources, and other considerations. For instance, although Utah reviews oil and gas emissions from some western basin, it fails to include an inventory from the basin and sources directly surrounding Canyonlands. We also encourage Utah to require monitoring of oil and gas sources such that it can include definitive data rather than relying on projected inventories, which can significantly underestimate emissions from these sources.

c. The Use of Monitoring Data is Inconsistent with EPA’s Actions Elsewhere

Finally, EPA cannot allow Utah to use monitoring data to subvert modeled results because doing so would be completely inconsistent with its actions elsewhere, which have not allowed reliance on monitored visibility data and have affirmed the importance of NO<sub>x</sub> reductions. Because of large geographic scope of regional haze, the atmospheric chemistry involving Utah’s power plants and the affected Class I areas is largely similar to that in other BART determinations, including alternatives to BART, on the Colorado Plateau and in the Interior West broadly. These include decisions that ultimately required the installation of SCR

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<sup>206</sup> Proposed Rule, Revisions to Provisions Governing Alternative to Source-Specific BART Determinations, 70 Fed. Reg. 44,154, 44,169 (Aug. 1, 2005).

<sup>207</sup> The Conservation Organizations also note that if Utah were to conclusively determine that it cannot achieve enough NO<sub>x</sub> emission reductions to overcome an ammonia limitation at Canyonlands, then it should consider in its SIP measures that minimize anthropogenic sources of ammonia.

<sup>208</sup> UDAQ Staff Review, at 17.

as BART in Wyoming,<sup>209</sup> Arizona,<sup>210</sup> and Colorado,<sup>211</sup> including at facilities that impact some of the same Class I areas in question here (e.g. Cholla Units 2, 3, and 4, which impact, among others, Capitol Reef, Grand Canyon, and Mesa Verde National Parks). Visibility monitoring information appropriately did not play a role in these BART determinations; rather, they relied on modeling conducted against a natural background. EPA's decisions in these cases confirmed the importance of NO<sub>x</sub> emission reductions as a means of making reasonable progress towards the national goal of natural visibility conditions. In asking EPA to excuse controls on Hunter and Huntington Units 1 and 2 on the basis of monitored conditions, Utah is asking for special treatment that EPA cannot allow.

- d. Improper use of seasonal use statistics to downplay the importance of the wintertime visibility impact.

Utah also seeks to discount the visibility benefits of SCR using seasonal use statistics for Utah's national parks. We concur with EPA's conclusion that "nothing in the CAA suggests that visitors during busy time periods are entitled to experience better visibility than visitors during off-peak periods."<sup>212</sup> According to Utah, lower winter visitation means that the benefits of SCR should be discounted. This position finds no basis in the Clean Air Act, which does not tether the visibility improvement mandate to a threshold number of visitor experiences. To the contrary, Congress "declare[d] as a national goal the prevention of *any* future, and the remedying of *any* existing, impairment of visibility in mandatory class I Federal areas which impairment results from manmade air pollution." 42 U.S.C. § 7491(a)(1) (emphases added). In any event, as discussed above, Hunter and Huntington NO<sub>x</sub> emissions cause visibility impacts at all times of the year, not just in the winter, regardless of the variable magnitude of those impacts. Utah may not rely on seasonal use statistics to argue that reasonable NO<sub>x</sub> BART controls should not be required. Because SCR is cost-effective and would yield substantial visibility improvements at numerous Class I areas, it represents NO<sub>x</sub> BART for Units 1 and 2 of Hunter and Huntington.

#### 4. The Timing of Emissions Reductions under the BART Alternative Does Not Demonstrate Its Superiority

The timing of emissions reductions under Utah's BART Alternative also does not support a "greater reasonable progress" finding.<sup>213</sup> First, although Utah notes that emissions reductions required by BART will occur five years after EPA promulgates a final regional haze rule for Utah,<sup>214</sup> Utah failed to note that the rule is now more than eight years behind schedule because of Utah's litigation and delays. Although states were required to submit SIPs addressing regional

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<sup>209</sup> Final Rule, Wyoming Regional Haze, 79 Fed. Reg. 5,032 (Jan. 30, 2014).

<sup>210</sup> Final Rule, Arizona Regional Haze, 77 Fed. Reg. 72,512 (Dec. 5, 2012).

<sup>211</sup> Final Rule, Colorado Regional Haze, 77 Fed. Reg. 76,871 (Dec. 31, 2012).

<sup>212</sup> 81 Fed. Reg. at 2,024.

<sup>213</sup> See 81 Fed. Reg. at 2,018, 2,030.

<sup>214</sup> *Id.* at 2,030.



haze no later than December 17, 2007,<sup>215</sup> Utah for the first time submitted a regional haze SIP that included BART determinations for Hunter and Huntington’s NO<sub>x</sub> and particulate matter emissions on May 26, 2011. On December 14, 2012, EPA properly rejected Utah’s 2011 determinations because they were not based on a valid five-factor BART analysis as required by EPA regulations, 40 C.F.R. § 51.308(e)(1).<sup>216</sup> Utah then chose to litigate EPA’s decision rather than to prepare a compliant SIP, and it was only after Utah’s lawsuit was dismissed that it submitted the BART Alternative SIP that is the subject of EPA’s current rulemaking. If Utah had submitted a timely SIP, BART-based emissions reductions from Hunter Units 1 and 2 and Huntington Units 1 and 2 would have occurred well before the Carbon Plant’s recent shut down, and before even the installation of combustion controls to lower NO<sub>x</sub> emissions from these units and Hunter Unit 3.<sup>217</sup> Under the “clear weight of evidence” test, it would be improper to reward Utah’s laggardly approach to regional haze compliance by crediting the BART Alternative as achieving earlier emissions reductions.

In summary, Utah has not met its heavy burden of proving by the “clear weight of evidence” that its BART Alternative will achieve greater reasonable progress than would implementation of BART.

## **VI. UTAH’S BART ALTERNATIVE IMPROPERLY RELIES ON EMISSIONS REDUCTIONS FROM CARBON AND HUNTER UNIT 3 THAT ARE NOT “SURPLUS”**

Independent of the “greater reasonable progress” requirement, states proposing an alternative to BART must demonstrate that “the emission reductions resulting from the ... alternative measure will be surplus to those reductions resulting from measures adopted to meet requirements of the CAA as of the baseline date of the SIP.”<sup>218</sup> Even if Utah could take credit for solely historical emissions reductions from the Carbon Plant and Hunter Unit 3—which, as explained in Part VII, it cannot—Utah’s BART Alternative cannot be approved because it relies on emissions reductions from those units that are *not* surplus to reductions required as of the baseline SIP date, which EPA has determined is 2002.<sup>219</sup>

### **1. Carbon Unit 3’s Emissions Reductions Since the 2002 Baseline Date Should Not Be Considered Surplus**

In addition to Utah’s failure to assume realistic emissions from the Carbon Plant in a future BART scenario, Utah’s BART Alternative impermissibly takes credit for Carbon Plant emissions reductions that are not surplus as of the baseline date of the SIP. As described above

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<sup>215</sup> 40 C.F.R. § 51.308(b).

<sup>216</sup> Final Rule, Utah Regional Haze, 77 Fed. Reg. 74,355, 74,357 (Dec. 14, 2012).

<sup>217</sup> 81 Fed. Reg. at 2,030 (noting that combustion controls reduced NO<sub>x</sub> emissions at Hunter and Huntington between 2006 and 2014).

<sup>218</sup> 40 C.F.R. § 51.308(e)(2)(iv).

<sup>219</sup> 81 Fed. Reg. at 2,019.

in Part V.A.1.a, Carbon Plant emissions have increased in recent years due to Carbon's burning of higher sulfur coal. Emissions of SO<sub>2</sub> from the Carbon Plant in 2002—the baseline date of the SIP—totaled only 6,764 tons/year.<sup>220</sup> However, Utah's BART Alternative takes credit for eliminating 8,005 tons/year of SO<sub>2</sub>, which reflects the Carbon Plant's 2012-2013 SO<sub>2</sub> emissions.<sup>221</sup> Thus, the Carbon Plant's SO<sub>2</sub> emissions *increased* from the baseline date of the SIP—and the difference in emissions between 2002 and 2012-2013 cannot be considered “*reductions* resulting from measures adopted to meet requirements of the CAA as of” 2002.<sup>222</sup>

Utah should not be allowed emissions reduction credit for the shutdown of the Carbon units at emissions levels that exceeded the emissions as of the 2002 baseline date of the SIP. Such an approach would allow Utah to take credit for SO<sub>2</sub> emissions increases at the Carbon Plant above the 2002 baseline for the regional haze plan emission inventory, and such emission reductions at a level that exceed the 2002 baseline emissions inventory cannot be considered surplus.<sup>223</sup> Thus, if Utah may take *any* credit for Carbon Plan SO<sub>2</sub> emissions reductions, it may only take credit for the 6,764 tons/year that are arguably surplus to emissions reductions required as of the 2002 baseline date of the SIP.

## 2. Hunter Unit 3's NO<sub>x</sub> Emissions Reductions Since the 2002 Baseline Date Should Not Be Considered Surplus

Utah's request to take credit in the BART Alternative for the installation of low NO<sub>x</sub> burners at Hunter Unit 3 (a non-BART unit) is also improper because the emissions reductions are not surplus to reductions required as of 2002.<sup>224</sup>

For Hunter Unit 3, PacifiCorp installed upgraded low-NO<sub>x</sub> burner controls in 2007,<sup>225</sup> and Utah has claimed that those upgrades were not required by the Clean Air Act as of the 2002 baseline date of the SIP.<sup>226</sup> However, a recent compliance review completed by the Sierra Club as part of Utah's proposed issuance of a Title V renewal permit for the Hunter plant indicated that Hunter Unit 3, as well as Hunter Units 1 and 2, constructed projects in the 1996-1999 timeframe that should have triggered prevention of significant deterioration (“PSD”) permitting requirements and best available control technology (“BACT”) as major modifications of NO<sub>x</sub>,

<sup>220</sup> 2016 Stamper TSD, at 33 (Table 8).

<sup>221</sup> 81 Fed. Reg. at 2,015 (Table 3).

<sup>222</sup> 40 C.F.R. § 51.308(e)(2)(iv) (emphasis added).

<sup>223</sup> 2016 Stamper TSD, at 57-58.

<sup>224</sup> 81 Fed. Reg. at 2,014.

<sup>225</sup> Although Utah and EPA have stated that these NO<sub>x</sub> controls were installed in 2008, a December 18, 2009 letter from PacifiCorp to Utah states that the low NO<sub>x</sub> burners were installed in the Spring 2007 outage. See December 18, 2009 letter from PacifiCorp to EPA at 4 (Ex. 21 attached hereto).

<sup>226</sup> 81 Fed. Reg. at 2,020.

SO<sub>2</sub>, and PM<sub>10</sub>.<sup>227</sup> Therefore, PacifiCorp was obligated to install NO<sub>x</sub> pollution controls to meet BACT at Hunter Unit 3 prior to the baseline date of the SIP and therefore the NO<sub>x</sub> emissions reductions achieved with the 2007 installation of low NO<sub>x</sub> burners are not surplus and cannot be credited in the State's BART Alternative.<sup>228</sup>

The projects at Hunter Unit 3 were identified in an August 18, 1997 Notice of Intent submitted to UDAQ to be constructed at Unit 3 in 1995 through 1998.<sup>229</sup> The projects included rotating classifiers on mills, addition of risers and supply tubes, replacement of superheater outlet bank and manifolds, replacement of oil ignitors, resizing of cold reheat safety valves, changes to the turbine including aeroderivative design, installation of on-line performance manager, and installation of condensate polisher.<sup>230</sup> According to the 1997 Notice of Intent submitted by PacifiCorp, the heat input capacity at Hunter Unit 3 was projected to increase from 4,160 MMBtu/hour to 4,900 MMBtu/hour.<sup>231</sup>

UDAQ issued Approval Orders (i.e., construction permits) for the Hunter projects outlined in the August 18, 1997 permit application in November and December of 1997, imposing limits on potential to emit of SO<sub>2</sub>, NO<sub>x</sub>, and PM purportedly to keep the projects from triggering PSD.<sup>232</sup> Utah's abstract for the Approval Order states that the permit is to consolidate prior permits for all three Hunter units, as well as to establish limits on potential to emit:

Associated with this consolidation, Pacificorp is requesting that additional enforceable emission limits be established which will limit the potential to emit (PTE) from this source. These limits are being imposed to demonstrate that the consolidation will not exceed the Prevention of Significant Deterioration (PSD)

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<sup>227</sup> See November 13, 2015 letter from William J. Moore, III, to Utah Division of Air Quality, with comments submitted on behalf of Sierra Club, at pp. 6-49 (Ex. 22 attached hereto).

<sup>228</sup> In the November 2015 comments from Sierra Club to Utah on the draft Hunter Title V renewal permit, Sierra Club provided comments, analysis, and exhibits to show that BACT would be based on installation of selective catalytic reduction (SCR). *Id.* at 83-87. See also Report of Matt Haber: Best Available Control Technologies for the Baldwin Generating Station, Baldwin, Illinois (April 2002), prepared for the United States in connection with *United States v. Illinois Power Company and Dynergy Midwest Generation, Inc.*, (cv-99-833-MJR, S.D. IL) ("Haber Expert Report") (Ex. 23 attached hereto).

<sup>229</sup> See August 18, 1997 PacifiCorp Notice of Intent, Request for Approval Order Modifications to Limit the Potential to Emit at the Hunter Plant, Table 1 (Ex. 24 attached hereto).

<sup>230</sup> *Id.* at Table 1 (page 9).

<sup>231</sup> *Id.* at Table 2 (page 1).

<sup>232</sup> November 20, 1997 Approval Order (Ex. 25 attached hereto); December 18, 1997 Approval Order (Ex. 26 attached hereto). Utah intended the December 18, 1997 Approval Order to replace the November 20, 1997 Approval Order, as discussed in a May 3, 2005 letter from UDAQ to PacifiCorp (Ex. 4 to Sierra Club's November 13, 2015 comment letter). The only difference between the two Approval Orders was that EPA removed a 1.0 lb/MMBtu sulfur in coal limit in the December 18, 1997 Approval Order.

baseline emission inventory. *A number of projects, which may increase the capacity or capacity utilization of the three units, have been planned or completed. The net effect of these projects could be an increase in emissions, hence the newly requested limits to insure an emission decrease...*<sup>233</sup>

As detailed by Sierra Club in its November 2015 comments to Utah, the 1997 Approval Orders were based on an unlawful and improper applicability test of evaluating emissions changes based on an apparent allowable-to-allowable emissions basis.<sup>234</sup> The pre-project actual baseline emissions of the Hunter units were much lower than the “PSD baseline emissions inventory” relied on by UDAQ to reflect the Hunter Units’ baseline emissions before the projects authorized in the 1997 Approval Order.<sup>235</sup>

EPA recently recognized that Utah had been applying faulty PSD applicability analyses with respect to baseline emissions in its draft Title V permitting action for the Deseret Power Electric Cooperative’s Bonanza Plant.<sup>236</sup> Utah had been acting as the permitting authority for the Bonanza Plant until 1999, after the United States Court of Appeals for the Tenth Circuit determined that the land where the Bonanza plant is located is part of the Uintah & Ouray Indian Reservation.<sup>237</sup> Utah had previously issued a PSD permit to construct the Bonanza facility in 1981 and issued an Approval Order in 1998 to allow modifications to the Bonanza power plant known as the Ruggedized Rotor Project.<sup>238</sup> In 2001, without conducting its own independent analysis, the EPA Region VIII incorporated the contents of Utah’s 1981 and 1998 permit analyses into an updated after-the-fact federal air permit.<sup>239</sup> Subsequently, in its 2014 Statement of Basis for its draft Title V Operating Permit for the Bonanza Plant, EPA acknowledged that its “2001 PSD permit decision incorporating the rationale of [UDAQ’s Modified Source Plan Review for the Ruggedized Rotor Project] was defective...”<sup>240</sup> In particular, EPA highlighted that Utah’s evaluation of the Ruggedized Rotor Project “failed to use actual pre-project emissions as the baseline for determining the amount of increase.”<sup>241</sup> That is the same major

<sup>233</sup> December 18, 1997 Approval Order, DAQE-1189-97, at 1 (Ex. 26).

<sup>234</sup> See November 13, 2015 letter from William J. Moore, III, to Utah Division of Air Quality, with comments submitted on behalf of Sierra Club, at 9-49) (Ex. 22).

<sup>235</sup> *Id.* at 2-27.

<sup>236</sup> See April 28, 2014 Statement of Basis, Title V Permit to Operate, Draft Permit No. V-UO-000004-00.00, Deseret Power Electric Cooperative, Bonanza Power Plant, Appendix A at pp. 27-28, 29, 33-36 (Ex. 27 hereto). In particular, EPA made clear that its “2001 PSD permit decision incorporating the rationale of [UDAQ’s Modified Source Plan Review] was defective....” *Id.* at 36.

<sup>237</sup> *Id.* at 2.

<sup>238</sup> *Id.*, Appendix A at 34-35.

<sup>239</sup> *Id.*

<sup>240</sup> *Id.*, Appendix A at 35.

<sup>241</sup> *Id.*

deficiency that Sierra Club identified with Utah's 1997 Approval Order for the Hunter plant projects.

Shortly after issuing the 1997 Approval Order with limits on potential to emit intended to keep the projects at the Hunter units from triggering PSD permitting requirements, UDAQ relaxed the limits it had imposed on potential to emit SO<sub>2</sub>, NO<sub>x</sub>, and PM in a 1998 Title V operating permit by incorporating carte blanche exemptions from those limits for startup, shutdown, maintenance/planned outage, and malfunction.<sup>242</sup> Thus, even if the applicability test that Utah applied was lawful (which it clearly was not), the 1997 Approval Order and associated limits on potential to emit of the modified Hunter units became ineffectual due to the relaxation of those emissions limits in the 1998 Title V operating permit for the Hunter plant.<sup>243</sup> Once the Title V operating permit was issued in January 1998, the projects at the Hunter plant should have been permitted as though construction had not yet commenced.<sup>244</sup>

Despite Sierra Club's detailed comments and analyses in its November 13, 2015 letter to Utah on the draft Title V renewal permit for the Hunter plant regarding projects that should have triggered PSD permitting, Utah did not specifically respond to any of Sierra Club's detailed comments regarding these projects at the Hunter plant. Utah's justification in part was that compliance is not to be addressed in a Title V permitting action:

The first 100 pages of Sierra Club's letter pertain to compliance, previous New Source Review permitting, and the Utah State Implementation Plan (SIP). Compliance is an enforcement matter for UDAQ and is not addressed in this permitting action. Any concerns regarding previous permits should have been

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<sup>242</sup> *Id.* at 42-47. *See also* Title V Operating Permit for Hunter Power Plant, Permit Number 1500101001, issued January 7, 1998 (Ex. 25 to Sierra Club's November 2015 comment letter to Utah, attached hereto as Ex. 28), e.g., Condition II.B.3.a. (NO<sub>x</sub> limit for Unit 3 except with exceptions for periods of startup, shutdown, maintenance/planned outage, or malfunction). 25).

<sup>243</sup> *See* November 13, 2015 letter from William J. Moore, III, to Utah Division of Air Quality, with comments submitted on behalf of Sierra Club at 47. *See also* 40 C.F.R. § 52.21(r)(4), 45 Fed. Reg. 52676-52748 at 52689 (August 7, 1980).

<sup>244</sup> 40 C.F.R. § 52.21(r)(4); UACR 307-1-3.1.11 of the Utah SIP (1995, as in effect under Clean Air Act § 110 at the time of the 1997 Approval Order and 1998 Title V Permit for the Hunter Plant).

raised during public comments at the time those permitting actions took place....<sup>245</sup>

Putting aside the fact that assuring compliance with all applicable Clean Air Act requirements (including rectifying noncompliance) is one of the defining requirements of the Title V permitting program,<sup>246</sup> UDAQ's response to the Sierra Club's comments did not say that the 1997 projects at the Hunter units did not trigger PSD review. Utah did not provide any responses to Sierra Club's detailed claims that the 1997 projects at the Hunter plant should have been permitted as major modifications for NOx and other pollutants. Moreover, Utah did not attempt to claim that its 1997 Approval Order issued for the projects met the Clean Air Act requirements for those Hunter projects. Instead, UDAQ simply did not respond to Sierra Club's comments on PSD noncompliance, asserting that past permitting decisions cannot be revisited in the context of a Title V permit.

Assuming Hunter Unit 3 should have obtained a PSD permit for NOx and other pollutants in 1997, then the unit should have been subject to best available control technology (BACT) for NOx as part of that permit. It is thus very unlikely that the 2007 NOx emissions reductions at Hunter Unit 3 were surplus. Indeed, based on an evaluation and documentation in Sierra Club's November 13, 2015 comment letter on the Hunter Title V permit, BACT for NOx would be likely be based on greater NOx emissions reductions than achieved with the 2007 installation of upgraded low NOx burners at Hunter Unit 3.<sup>247</sup>

PacifiCorp has implied that its pollution control installations and upgrades for NOx and other pollutants at the Hunter units were intended to pacify EPA to avoid an EPA enforcement action for past PSD violations. Specifically, in a 2011 filing with the Utah Public Service Commission, Cathy Woolems of MidAmerican Energy (of which PacifiCorp is a subsidiary) referred to a 2003 information request made by EPA under Section 114 of the Clean Air Act regarding the Hunter plant (among others) and stated:

In an effort to avoid the negative consequences of a New Source Review enforcement action, the Company has kept EPA apprised of its emission reduction

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<sup>245</sup> UDAQ Memorandum to PacifiCorp Hunter Title V Source File, Response to Public Comments, January 11, 2016, at 2 (Exhibit 29 hereto). Utah's response to comments is inconsistent with the requirements and intent of the Title V permitting requirements. EPA has long held that both the public and EPA can raise issues that an emission unit "has not gone through the proper preconstruction permitting process (and therefore one or more applicable requirements are not incorporated into the draft or proposed Title V permit)." *See* May 20, 1999 letter from John Seitz, EPA OAQPS to Robert Hodanbosi and Charles Laggies, STAPPA/ALAPCO (Exhibit 30 hereto).

<sup>246</sup> *See* 40 C.F.R. § 70.1(b); § 70.5(c)(8); § 70.6(c)(3); 42 U.S.C. § 7661c(a); Utah Administrative Code R307-415-5c(8); R307-415-6c(3) and (4).

<sup>247</sup> Sierra Club's comments to Utah on the draft Hunter Title V renewal permit asserted that BACT would be based on SCR. *See* November 13, 2015 letter from William J. Moore, III, to Utah Division of Air Quality, with comments submitted on behalf of Sierra Club at 79-87.

effort. It is the Company's belief that that had it not been engaged in a reasonable program to reduce its emissions through the installation of controls, the EPA would likely have pursued an enforcement action.<sup>248</sup>

Thus, it seems highly questionable that the NO<sub>x</sub> emissions reductions made at Hunter Unit 3 in 2007 with the addition of new low NO<sub>x</sub> burners was a surplus emissions reduction. If PacifiCorp was so concerned about new source review liability based on its responses to a 2003 Information Request from EPA that it voluntarily made NO<sub>x</sub> reductions at Hunter Unit 3 with the installation of upgraded low NO<sub>x</sub> burners, one cannot say with any certainty that the associated NO<sub>x</sub> reductions were surplus to Clean Air Act requirements in existence as of the baseline date of the Utah regional haze plan.

Sierra Club has raised significant issues calling into question Hunter Unit 3's compliance with PSD issues as of 1997, prior to the baseline date of the regional haze SIP. Utah failed to provide any responses to Sierra Club's detailed claims about this PSD noncompliance, let alone disagree with Sierra Club's claims. Instead, the state simply chose not to respond to these issues. Utah's lack of a response means that it has not met its heavy burden to demonstrate by the clear weight of evidence that the NO<sub>x</sub> emissions reductions at Hunter Unit 3 were surplus to the Clean Air Act requirements in effect at the time of the regional haze SIP. EPA must take all of this information into account in determining whether the clear weight of the evidence supports a finding that the NO<sub>x</sub> emissions reductions at Hunter Unit 3 made in 2007 with the installation of upgraded low NO<sub>x</sub> burners were surplus emissions reductions. The Conservation Organizations' contend that the clear weight of the evidence provided above and in the cited exhibits does not support a definitive finding by EPA that the NO<sub>x</sub> emissions reductions achieved at Hunter Unit 3 were in fact surplus.

## **VII. UTAH'S BART ALTERNATIVE CANNOT BE APPROVED BECAUSE IT FAILS TO REDUCE EMISSIONS FROM UTAH'S BART-SUBJECT SOURCES**

Even if Utah's proposed BART Alternative were better than BART from an emissions-reduction or visibility-improvement perspective—and as demonstrated above, it is not—it is additionally unlawful because it fails entirely to secure actual emissions reductions from Utah's BART sources, which conflicts with both the Regional Haze Rule and EPA precedent.

### **A. The Regional Haze Rule Requires Alternative Programs to Achieve Future Emissions Reductions from BART Sources**

While EPA regulations allow alternative programs that secure reductions in haze-causing emissions from BART sources through measures other than BART, Utah's proposed alternative would simply excuse Hunter Units 1 and 2 and Huntington Units 1 and 2 from any future emissions-reduction requirement. As discussed above, Point II.A.2, a BART Alternative must

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<sup>248</sup> 2011 Rebuttal Testimony of Cathy S. Woolems before the Utah Public Service Commission, Docket 100-035-124, at 10 (Ex. 31 hereto), downloaded from Utah's Public Service Commission website at <http://www.psc.state.ut.us/>, under Docket Number 10-035-124 (last accessed March 8, 2016).

comply with Congress’s direction to reduce haze-causing emissions from the sources that are subject to BART. In developing regulations governing development of alternative programs, EPA recognized Congress’ specific direction to control emissions from a certain set of sources—those with the greatest contribution to the regional haze problem—yet granted states “flexibility to achieve greater reasonable progress towards the national goal at a lower cost, while still addressing the Congressional concern that *existing sources contributing to visibility impairment be required to control emissions appropriately*.”<sup>249</sup> As EPA explained, “[b]ecause of the Congressional focus on control of these [BART] sources, any emissions trading program *must include, at a minimum, the sources within the trading region subject to BART*.”<sup>250</sup> While the cited language references trading programs specifically, the Regional Haze Rule requirement is broader. For any alternative measure, “[t]he State is not required to include every BART source category or every BART-eligible source within a BART source category in an alternative program, but *each BART-eligible source in the State must be subject to the requirements of the alternative program, [or] have a federally enforceable emission limitation determined by the State and approved by EPA as meeting BART*.”<sup>251</sup> This requirement ensures that the sources with the greatest share of the contribution to the regional haze problem do not escape statutorily mandated emissions reductions.<sup>252</sup>

Utah’s BART Alternative does not satisfy these requirements. In fact, the Alternative relies exclusively on past emissions reductions and largely excludes all BART sources in the state by excusing Hunter Units 1 and 2 and Huntington Units 1 and 2 from future emissions reductions under both the alternative program and BART-derived emission limits. The requirement to achieve actual future emissions reductions from BART sources makes perfect sense in the cases of Hunter and Huntington. Not only do these sources satisfy the category, size, and age criteria that Congress deemed appropriate for mandatory retrofit requirements, the plants are both within 100 miles of three Class I areas—Arches, Canyonlands, and Capitol Reef national parks and within the airshed of many more. The vistas in these spectacular lands, in addition to several other Class 1 areas, within and outside of Utah, suffer impairment from Hunter and Huntington’s NOx emissions. While the April 2015 retirement of the Carbon Plant and 2008 NOx emissions reductions from Hunter Unit 3 no doubt improved visibility at these parks to some degree, they will remain unlawfully impaired in the future by NOx emissions from the BART-subject units under Utah’s alternative. Without adequate BART controls for

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<sup>249</sup> 1999 Regional Haze Rule, 64 Fed. Reg. at 35,741 (emphasis added).

<sup>250</sup> *Id.* at 35,742 (emphasis added).

<sup>251</sup> 40 C.F.R. § 51.308(e)(2)(i)(B) (emphasis added).

<sup>252</sup> *See* 42 U.S.C. § 7491(b)(2)(A) (BART requirement).



emissions of NO<sub>x</sub>, Utah fails to make reasonable progress toward the national visibility goal of *eliminating* human-caused visibility impairment in these lands.<sup>253</sup>

**B. Utah's Alternative Proposal Conflicts with EPA Precedent, Which Requires Actual Emissions Reductions From BART Sources**

Utah's proposed alternative not only contradicts legal requirements, it is inconsistent with other BART alternative programs approved by EPA.

**1. Clean Air Interstate Rule**

One of the earliest examples of an EPA-approved, BART alternative program is the Clean Air Interstate Rule ("CAIR"), which required certain eastern states to reduce any emissions of SO<sub>2</sub> and NO<sub>x</sub> that significantly contributed to, or interfered with maintenance of, the national ambient air quality standards for fine particulates or ozone in any downwind state. First, it is important to note that the CAIR program was specifically identified as a potential substitute for BART and specific requirements for this program are enumerated in EPA's regional haze regulations.<sup>254</sup> This is important because the rules governing CAIR are separate from those governing other "alternative programs" to BART. In addition, CAIR is an interstate SO<sub>2</sub> and NO<sub>x</sub> "trading program." Utah's ability to rely on a trading scheme is limited to its participation as a 309 state, thus this proposal must instead be evaluated under the "BART alternative" regulations, relating strictly to emissions of nitrogen oxides and PM. Despite these significant differences between the programs, it is clear that the CAIR program was designed as a forward looking program that would require *future* emissions reductions to serve as a substitute for BART. In contrast, Utah's BART Alternative is a backward looking program that seeks to rely solely on past emissions reductions that largely resulted from other regulatory programs, i.e. the Carbon units closures resulted from the MATS program, not from regional haze obligations, and fail to deliver visibility benefits needed to comply with the Regional Haze Rule's BART obligations.

Further, in finding that CAIR satisfied the "greater reasonable progress" requirement for alternative programs, EPA noted specifically that BART, if implemented, would not achieve emissions reductions over and above those achieved by CAIR, because CAIR and BART covered the same sources of haze emissions.

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<sup>253</sup> 42 U.S.C. § 7491(a) (visibility goal). It is worth noting that each SIPs long-term strategy already must account for emissions reductions expected to be achieved under other CAA requirements. EPA requires that, in developing reasonable progress goals, States should include all air quality improvements that will be achieved by other programs and activities under the CAA and any State air pollution control requirements. Therefore, any reasonable progress goal for a Class I area should reflect at least the rate of visibility improvement expected from the implementation of other 'applicable requirements' under the CAA during the period covered by the long-term strategy." 1999 Regional Haze Rule, 64 Fed. Reg. at 35,733. Allowing state to take credit for any such "applicable requirements" under the CAA in lieu of BART would effectively nullify any reasonable progress requirements over and above BART.

<sup>254</sup> 40 C.F.R. § 51.308(e)(4).

[T]he fact that BART and CAIR originate from different provisions of the CAA does not mean that CAIR and BART emissions reductions would be additive if BART-eligible EGUs in the CAIR program were required to install and operate BART. Such source specific control requirements would simply result in a redistribution of emission reductions, as other EGUs could buy the excess allowances generated by the installation of controls at BART units. The net result would be the same level of emission reductions, but at a higher total cost, because the ability of the market to find the most cost effective emission reductions would be constrained.<sup>255</sup>

In contrast, because Utah's alternative program does not require future emissions reductions from BART sources, emissions reductions under BART *would be* additive to the emissions reductions already achieved through the Carbon closure and Hunter 3 emissions reductions. This fundamental difference alone nulls the Utah alternative.

## 2. Cross-State Air Pollution Rule

EPA's approval of the Cross-State Air Pollution Rule ("CSAPR"), like its predecessor, CAIR, also does not support Utah's proposed alternative. EPA replaced CAIR with CSAPR on August 8, 2011, and subsequently approved CSAPR as a BART alternative in certain circumstances.<sup>256</sup> CSAPR "allows allowance trading among covered sources, utilizing an allowance market infrastructure modeled after existing allowance trading programs."<sup>257</sup> As with CAIR, emissions reductions under CSAPR are forward, rather than backward, looking. And as with EPA's approval of CAIR as a BART alternative, EPA's approval of CSAPR as a BART alternative applies only to states subject to a FIP or SIP ensuring emissions reductions from the CSAPR trading program for the state's EGUs, which necessarily includes EGUs subject to BART.<sup>258</sup> Thus, like CAIR, CSAPR yields future emissions reductions from BART-subject EGUs. Although the Conservation Organizations do not support EPA's determination that CSAPR is a legitimate BART alternative program, it certainly does not provide precedent for Utah's proposed alternative.

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<sup>255</sup> Final Rule, Regional Haze Regulations and Guidelines for BART Determinations, 70 Fed. Reg. 39,104, 39,143 (July 6, 2005).

<sup>256</sup> Final Rule, Regional Haze: Revisions to Provisions Governing Alternatives to Source-Specific BART Determinations, Limited SIP Disapprovals, and Federal Implementation Plans, 77 Fed. Reg. 33,642 (June 7, 2012) (CSAPR Better-Than-BART Approval).

<sup>257</sup> *Id.* at 33,645.

<sup>258</sup> *Id.* at 33,647.

### 3. The 309 Program Backstop Trading Program

Closer to home, EPA approved a regional SO<sub>2</sub> trading program under 40 C.F.R. § 51.309 (the “309 Program”) as satisfying the better-than-BART requirements for SO<sub>2</sub> in Utah, Wyoming, and New Mexico.<sup>259</sup> Again, the 309 Program is designed to achieve emissions reductions from all EGUs in the three participating states and the emissions reductions are guaranteed by a future cap on emissions growth. While the Conservation Organizations disputed EPA’s determination that the 309 Program is better than source-specific BART determinations, the program’s scope and timing make it fundamentally distinguishable from Utah’s alternative. Moreover, and as discussed above, Utah’s participation in the 309 Program obviates the state’s ability to now double count SO<sub>2</sub> emissions reductions at issue with 309 towards its 308 obligations.

### 4. Source and state-specific alternatives

Most on-point, EPA has approved several “BART alternatives” for certain power plant units in the western United States. However, unlike Utah’s proposal, these BART alternatives required at least some *future* emissions reductions from subject-to-BART power plants. Utah’s BART alternative relies almost exclusively on *past* emissions reductions from geographically distinct *non-BART* sources. Thus, Utah’s proposed BART Alternative deviates not only from EPA’s regulations but also from EPA practice and precedent at electric generating units. For example, EPA has approved BART alternatives at the Four Corners power plant, Navajo Generating Station,<sup>260</sup> Apache Power Plant, Sundt power plant, State of Maryland power plants, and at power plants in Colorado.<sup>261</sup>

Specifically, unlike Utah’s proposal, each of the power plants with EPA approved BART alternatives include emissions reductions from sources that *are subject to BART and require at least some future emission reductions from such sources*. In contrast, Utah is proposing to exempt its BART sources from any future emission reduction in exchange for historical emission reductions primarily from geographically distinct non-BART sources. In addition, each of these

<sup>259</sup> See Final Rule, Approval, Disapproval and Promulgation of State Implementation Plans; State of Utah; Regional Haze Rule Requirements for Mandatory Class I Areas Under 40 CFR 51.309, 77 Fed. Reg. 74,355 (Dec. 14, 2012).

<sup>260</sup> The Navajo Generating Station BART alternative is being opposed by NPCA and Sierra Club. However, the alternative does contemplate future emission reductions beyond historic emission credits.

<sup>261</sup> Final Rule, Arizona Regional Haze, Reconsideration, 80 Fed. Reg. 19,220 (Apr. 10, 2015); Final Rule, Navajo Nation; Regional Haze Requirements for Navajo Generating Station, 79 Fed. Reg. 153 (Aug. 8, 2014); Final Rule, Source Specific Federal Implementation Plan for Implementing Best Available Retrofit Technology for Four Corners Power Plant; Navajo Nation, 77 Fed. Reg. 51,620 (Aug. 12, 2012); Final Rule, Arizona Regional Haze (Sundt Unit 4), 79 Fed. Reg. 52,420 (Sep. 3, 2014); Final Rule, Maryland Regional Haze, 77 Fed. Reg. 38,841 (July 6, 2012) (requiring both emission reductions at BART power plants and future emission reductions); Final Rule, Colorado Regional Haze, 77 Fed. Reg. 76,871 (Dec. 31, 2012).

EPA-approved EGU BART alternatives required future emissions reductions at *existing* BART sources.<sup>262</sup> In contrast, Utah relies largely on past, unrelated emissions reductions that occurred before the adoption of its regional haze SIP at retired non-BART sources.

For the reasons stated above, Utah's BART Alternative not only fails to comply with EPA regional haze regulations, but also fails to comply with EPA practice and precedent.

### **C. Utah's BART Alternative Improperly Takes Credit for Historical Emissions Reductions from Hunter Unit 3 and Carbon**

Utah's BART Alternative also must be rejected because historical emissions reductions from Carbon and Hunter Unit 3 were not "resulting from" and "achievable through" the "trading program or alternative measure," as required by EPA regulations.<sup>263</sup> As proposed, Utah's BART Alternative takes credit for a modest reduction of NO<sub>x</sub> emissions at Hunter 3 due to the installation of LNB in 2008 and elimination of PM, SO<sub>2</sub>, and NO<sub>x</sub> emissions due to the Carbon retirement.

The Hunter 3 NO<sub>x</sub> emissions reductions are not "resulting from" or "achievable under" Utah's BART Alternative. Utah points to no evidence in the administrative record indicating that 2008 NO<sub>x</sub> emissions reductions at Hunter 3 were "resulting from" or "achievable under" Utah's BART Alternative. Nor could they be. Utah did not even propose its BART Alternative program until 2015—seven years *after* the Hunter 3 emissions reductions. Any claim by Utah that the Hunter 3 NO<sub>x</sub> emissions reductions "resulted from" or were "achieved under" its newly proposed program lacks any factual support in the administrative record and is purely fiction.

Likewise, the emissions reductions at Carbon 1 and 2 were achieved on April 15, 2015—prior to the promulgation of Utah's BART Alternative. Thus, it is impossible that these emissions reductions "resulted from" or were "achieved under" a program that had yet to be promulgated. Further, as PacifiCorp itself has admitted on numerous occasions, the closure of Carbon Units 1 and 2 "resulted from" and were "achieved under" the federal MATS rule, not Utah's Regional Haze SIP. Moreover, reductions in SO<sub>2</sub> may not even be counted towards Utah's proposed alternative because of its participation in the 309 Program. Accordingly, Utah has not established compliance with the requirements of EPA BART alternative regulations.

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<sup>262</sup> Four Corners proposed to close three of its five units in the future and install controls on the remaining two units as an alternative to installing SCR on all five units. 77 Fed. Reg. 51,620. NGS proposed to either retire one NGS unit in the future or reduce future NGS generating capacity equivalent to one unit. 79 Fed. Reg. 153. Apache proposed to convert one unit from coal to gas in the future and install controls on the other unit in exchange for installing SCR on both Apache units. 80 Fed. Reg. 19,220. In Colorado, a BART alternative was established among Public Service Company BART sources. 77 Fed. Reg. 76,871.

<sup>263</sup> 40 C.F.R. § 51.308(e)(2)(iv), (e)(2)(i)(D).

### VIII. UTAH'S "ENFORCEABLE COMMITMENT" SIP IS LEGALLY FLAWED AND CANNOT BE APPROVED

Utah's BART Alternative is unapprovable for another reason: it improperly double-counts SO<sub>2</sub> emissions reductions occurring as the result of the Carbon Plant closure both to satisfy its NO<sub>x</sub> BART requirements and to satisfy its commitment under 40 C.F.R. § 51.309.

Utah attempted to resolve its "double-counting" problem by promising in an "Enforceable Commitment" SIP not to take credit for these emissions reductions in the § 51.309 SO<sub>2</sub> Backstop Trading Program and instead rely on these emissions reductions solely in the NO<sub>x</sub> BART program for the Hunter and Huntington plants. For these reasons stated below, Utah proposed Enforceable Commitment SIP amendment is unlawful, fails to resolve the deficiencies with Utah's Regional Haze SIP, and may not be adopted by EPA.

#### A. Utah's Proposed Post-hoc Amendment of its SO<sub>2</sub> Regional Haze SIP would Undermine the Legal Justification for EPA's Approval of that SIP

Utah's proposal to amend its SO<sub>2</sub> regional haze SIP is improper because it would undermine EPA's rationale for approving that SIP. Utah's SO<sub>2</sub> SIP, developed under 40 C.F.R. § 51.309 ("Section 309"), relied on a regional SO<sub>2</sub> Backstop Trading Program to purportedly achieve greater emissions reductions than would source-by-source application of the SO<sub>2</sub> BART requirements. According to Utah's "Response to Comments" in its most recent SIP revision, the SO<sub>2</sub> Regional Haze SIP did not explicitly account for the future Carbon Plant retirement or SO<sub>2</sub> emissions reductions in its projected emissions inventories for the alternative program, although it was well aware that PacifiCorp intended to retire the plant.<sup>264</sup> Yet this Response ignores that alternative program was found to be "better than BART" expressly because emissions reductions projected by those inventories would be *exceeded* through voluntary measures at "smaller, non-BART sources."<sup>265</sup> Now, Utah proposes to amend its SO<sub>2</sub> Regional Haze SIP by somehow extracting the previously relied upon Carbon plant SO<sub>2</sub> reductions and apply these reductions to its NO<sub>x</sub>/PM BART SIP for Hunter and Huntington. But Utah's proposal would effectively undermine EPA's legal justification for approving the Section 309 alternative program. Having touted the 309 Program's ability to garner SO<sub>2</sub> emissions reductions from "smaller, non-BART sources" such as the Carbon Plant, Utah may not now extract such sources from the program without nullifying its previous "better than BART" determination and the legal underpinnings for the 309 Program approval.

Further, if Utah's proposed omission of the Carbon Plant from the 309 Program were permissible, there would be nothing to stop Utah and the other states participating in the Program from removing other "smaller, non -BART sources" from the Program. The result would strip the 309 Program of its justification under the Regional Haze regulations. Such maneuverings

<sup>264</sup> See Utah Responses to Comments, Response No. 62 [Docket No. EPA-R08-OAR-2015-0463-0002].

<sup>265</sup> Final Rule, State of Utah; Regional Haze Rule Requirements for Mandatory Class I Areas Under 40 CFR 51.309, 77 Fed. Reg. 74,355, 74,360-61 (Dec. 14, 2012).

would also undermine the essence of the regional haze program to compel reasonable progress towards clear skies and place achievement of the natural conditions goal out of reach.

## B. EPA's Regional Haze Regulations Prohibit Utah's Proposed Emissions Reduction Accounting Proposal

Utah's proposal is also inconsistent with EPA regulations governing the 309 Program. The 309 Program regulations are clear that the SO<sub>2</sub> emissions reductions achieved through the Western Backstop Trading Program are in addition to, not in lieu of, appropriate BART-based NO<sub>x</sub> and PM emissions reductions. Specifically, the regulations require participating states to identify "BART requirements for stationary source PM and NO<sub>x</sub> emissions. Any such BART provisions may be submitted pursuant to either § 51.308(e)(1) or 51.308(e)(2)."<sup>266</sup> It would be paradoxical to read the 309 Program regulations to allow states to substitute the SO<sub>2</sub> trading program for NO<sub>x</sub> and PM emissions limits that are separately and specifically mandated by the regulations.

Those regulations also provide that the 309 Program "*must* include provisions requiring the monitoring, recordkeeping, and annual reporting of *actual* stationary source SO<sub>2</sub> emissions within the State."<sup>267</sup> Utah's proposed Enforceable Commitment SIP would violate this provision by arbitrarily including over 8,000 tons of SO<sub>2</sub> emissions from the Carbon plant in future inventory reports, when in fact the "*actual*" emissions from the Carbon plant from 2016-2018 will be zero. Thus, Utah's proposes to violate the mandatory requirement to report "*actual* stationary source SO<sub>2</sub> emissions within the State"—a requirement that is repeated throughout the 309 regulations.<sup>268</sup> Since the regional haze regulations specifically prohibit Utah's proposed accounting proposal, EPA may not approve the State's unlawful Enforceable Commitment SIP amendments.

## C. Utah is Impermissibly Attempting to Fit a Square Peg in a Round Hole

Utah's proposed Enforceable Commitment SIP states that its purpose is to "ensure[s] that SO<sub>2</sub> emissions reductions from the Carbon power plant closure are not *double counted* in the Regional Haze SIP" (emphasis added). Most fundamentally, the Enforceable Commitment SIP is misguided because fails to address the fundamental issue of whether the SO<sub>2</sub> emissions from the Carbon units *should be counted at all* in its NO<sub>x</sub>/PM regional haze SIP. As discussed below, Utah's attempt to rely on SO<sub>2</sub> emissions reductions from the Carbon units in the context of a NO<sub>x</sub>/PM regional haze SIP is arbitrary, capricious, and contrary to the purposes of the regional haze program.

<sup>266</sup> 40 C.F.R. § 51.309(d)(4)(vii).

<sup>267</sup> 40 C.F.R. § 51.309(d)(4)(iii).

<sup>268</sup> See, e.g., 40 C.F.R. § 51.309(d)(4)(i) ("[c]ompliance with the 2018 milestones *shall be measured by comparing actual emissions* from the year 2018 with the 2018 milestone") (emphasis added).

Utah is trying to fit a square peg in a round hole. Utah has submitted a regional haze NO<sub>x</sub>/PM BART SIP to EPA for approval. The sole focus of the current Regional Haze SIP submittal is to evaluate necessary NO<sub>x</sub> and PM emissions reductions required by the BART program at Hunter and Huntington Units 1 & 2. Instead of evaluating BART NO<sub>x</sub> reductions at Hunter and Huntington, Utah's Regional Haze and Enforceable Commitment SIPs slides in a past action for a different pollutant from a separate source category and seeks to take credit for SO<sub>2</sub> reductions at the non-BART Carbon units.

The Carbon plant is not a BART source and any emissions reductions from this source cannot be used to excuse upgrades at BART sources in this context. Utah's emissions reduction accounting proposal will not reduce visibility-impairing emissions or improve regional haze in the region's treasured national parks. Instead, it will unreasonably delay visibility benefits and wrongly exempt BART controls for NO<sub>x</sub> and PM emissions at the Hunter and Huntington plants resulting in continued impairment and an abdication from the statutory mandate to make reasonable progress toward natural conditions. The BART program was enacted to require some of the oldest grandfathered coal-burning power plants to retrofit with new air pollution controls to combat regional haze. Hunter and Huntington Units 1 & 2 are such BART units and must achieve BART NO<sub>x</sub>/PM emissions reductions to make the requisite progress toward eliminating human-caused visibility impairment.

Further, the focus of Utah's Regional Haze SIP currently pending with EPA is constrained as it relates only to BART emissions reductions requirements for NO<sub>x</sub> and PM at the Hunter and Huntington BART sources—it is not somehow broader because the state wishes it to be so; already delivered SO<sub>2</sub> emissions reductions from a non-BART source do not displace ongoing emissions from Utah's BART sources. Moreover, even if Carbon's SO<sub>2</sub> reductions could legitimately be counted, which they cannot, they fail to offset the level of pollutant reductions that should be achieved through adequate NO<sub>x</sub> and PM BART critical to making reasonable progress.

When viewed in its proper light, the inappropriateness of Utah's latest Enforceable Commitment SIP proposal is readily apparent. Instead of contorting requirements of the regional haze program to avoid application of NO<sub>x</sub> BART to Hunter and Huntington, Utah must properly apply the BART program and mandate *real* NO<sub>x</sub> emissions reductions thereby achieving actual improve visibility impairment in Utah's national parks.

#### **D. Utah's Delay until March 2018 to Revise its SIPs is Arbitrary and Capricious**

Moreover, even if Utah's proposed Enforceable Commitment SIP was proper—and it is not—it does not resolve Utah's "double counting" problem because it defers resolution of the SIP discrepancies. Utah claims it will "*as necessary*" revise its SO<sub>2</sub> Regional Haze SIP (emphasis added). Additionally, Utah vaguely asserts "[o]ther applicable provisions that *may be* identified in the future will be amended as well." Utah's use of vague language renders the Enforceable Commitment SIP deficient because Utah it is neither "enforceable" nor is there an adequate "commitment" to resolve current obligations or the double counting issue.

Where Utah does propose a specific timeframe for amendments, it is too late. Utah proposes to defer SO<sub>2</sub> Regional Haze SIP amendments to 2018. Contrary to this approach, all necessary amendments to the SO<sub>2</sub> SIP must occur now. Otherwise, EPA and members of the public are prevented from fully evaluating whether Utah's proposed SIP amendments comply with the law and are consistent with the regional haze program. The Enforceable Commitment SIP fails to explain why Utah cannot immediately propose amendments to Utah's SO<sub>2</sub> and NO<sub>x</sub> SIPs for EPA's approval.

**E. Utah's Enforceable Commitment SIP Amendments Create Irreconcilable Accounting Methodologies Among the Three-State Western Backstop Trading Program.**

Finally, Utah's proposed Enforceable Commitment SIP ignores that there are two other states participating in the SO<sub>2</sub> Western Backstop Trading Program—Wyoming and New Mexico. All states participating in the Western Backstop Trading Program must use the same inventory methodology.<sup>269</sup> While Utah's Enforceable Commitment SIP makes vague promises to resolve its SIP discrepancies by 2018, it fails to mandate similar changes to the Wyoming and New Mexico SO<sub>2</sub> SIPs. Nothing in the Utah Enforceable Commitment SIP prevents Wyoming and New Mexico from counting the Carbon SO<sub>2</sub> emissions reductions in their future annual milestone reports. Likewise, nothing in the Enforceable Commitment SIP requires Wyoming or New Mexico to revise their SO<sub>2</sub> SIPs to discount the Carbon SO<sub>2</sub> emissions reductions. Thus, Utah's Enforceable Commitment SIP does little to resolve the problems created by their unlawful accounting proposal. Instead, it creates more problems than it solves. EPA should not approve Utah's Enforceable Commitment SIP because it will result in irreconcilable inventory accounting methodologies among the three participating states.

**CONCLUSION**

We respectfully urge EPA to adopt its proposed Federal Implementation Plan for Units 1 and 2 at both the Hunter and Huntington coal plants consistent with the comments in this letter. Should you have any questions, please do not hesitate to contact us.

Sincerely yours,

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<sup>269</sup> 40 C.F.R. §51.309(d)(4)(i) ("...all States in the program [must] use the same methodology").



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#### LIST OF EXHIBITS

- 1) Letter from HEAL Utah, et al. to Utah Division of Air Quality (March 8, 2011)
- 2) Letter from HEAL Utah, et al. to Utah Division of Air Quality (Dec. 22, 2014)
- 3) Letter from HEAL Utah, et al. to Utah Division of Air Quality (May 1, 2015)
- 4) Letter from HEAL Utah, et al. to Utah Division of Air Quality (Sept. 14, 2015)
- 5) Letter from HEAL Utah, et al. to U.S. Environmental Protection Agency (July 16, 2012)
- 6) Letter from National Park Service to State of Utah (Aug. 1, 2008)
- 7) Letter from National Park Service to State of Utah (Mar. 4, 2011)
- 8) Letter from National Park Service to U.S. Environmental Protection Agency (July 13, 2012)
- 9) Utah Economic and Business Review, Volume 73, No. 4 (2014)
- 10) J. L. Mernit, Coal Versus Recreation in Utah, Sierra (March-April 2016)
- 11) UDAQ Regional Haze SIP PowerPoint Presentation dated June 6, 2012
- 12) Letter from National Park Service to State of Utah (May 1, 2015)
- 13) Modeling Report of Dr. Andrew Gray (Dec. 22, 2014)
- 14) Modeling Report of Dr. Andrew Gray (Apr. 30, 2015)

- 15) UDAQ, "Review of 2008 PM BART Determination and Recommended Alternative to BART for NO<sub>x</sub>" (Feb. 13, 2015)
- 16) Report and Order dated September 19, 2012 Utah Public Service Commission
- 17) In the Matter of the Application of Rocky Mountain Power for a Deferred Accounting Order Authorizing the Creation of a Regulatory Asset Associated with the Remaining Book Value of the Carbon Plant, Case No. PAC-E-12-08, Application for Accounting Order, ¶ 4 (Id. Pub. Util. Comm'n May 3, 2012)
- 18) Pacific Power, Advice Letter 496-E to Calif. Pub. Util. Comm'n (Dec. 4, 2013).
- 19) Oregon Public Utilities Commission Order 14-331
- 20) Wyoming Public Service Commission "Findings of Fact, Conclusions of Law, Decision and Order *nunc pro tunc*"
- 21) Letter from PacifiCorp to U.S. Environmental Protection Agency (Dec. 18, 2009)
- 22) Letter from William J. Moore, III, to Utah Division of Air Quality, with comments submitted on behalf of Sierra Club (Nov. 13, 2015)
- 23) Report of Matt Haber: Best Available Control Technologies for the Baldwin Generating Station, Baldwin, Illinois (April 2002), prepared for the United States in connection with United States v. Illinois Power Company and Dynergy Midwest Generation, Inc. (cv-99-833-MJR, S.D. IL)
- 24) PacifiCorp Notice of Intent, Request for Approval Order Modifications to Limit the Potential to Emit at the Hunter Plant, Table 1 (Aug. 18, 1997)
- 25) Utah Division of Air Quality, Approval Order (Nov. 20, 1997)
- 26) Utah Division of Air Quality, Approval Order (Dec. 18, 1997)
- 27) Utah Division of Air Quality, Statement of Basis, Title V Permit to Operate, Draft Permit No. V-UO-000004-00.00, Deseret Power Electric Cooperative, Bonanza Power Plant, Appendix A (Apr. 28, 2014)
- 28) Title V Operating Permit for Hunter Power Plant, Permit Number 1500101001 (Jan. 7, 1998)
- 29) UDAQ Memorandum to PacifiCorp Hunter Title V Source File, Response to Public Comments, January 11, 2016
- 30) May 20, 1999 letter from John Seitz, EPA OAQPS to Robert Hodanbosi and Charles Lagges, STAPPA/ALAPCO
- 31) 2011 Rebuttal Testimony of Cathy S. Woolems before the Utah Public Service Commission, Docket 100-035-124